

FIG. 1

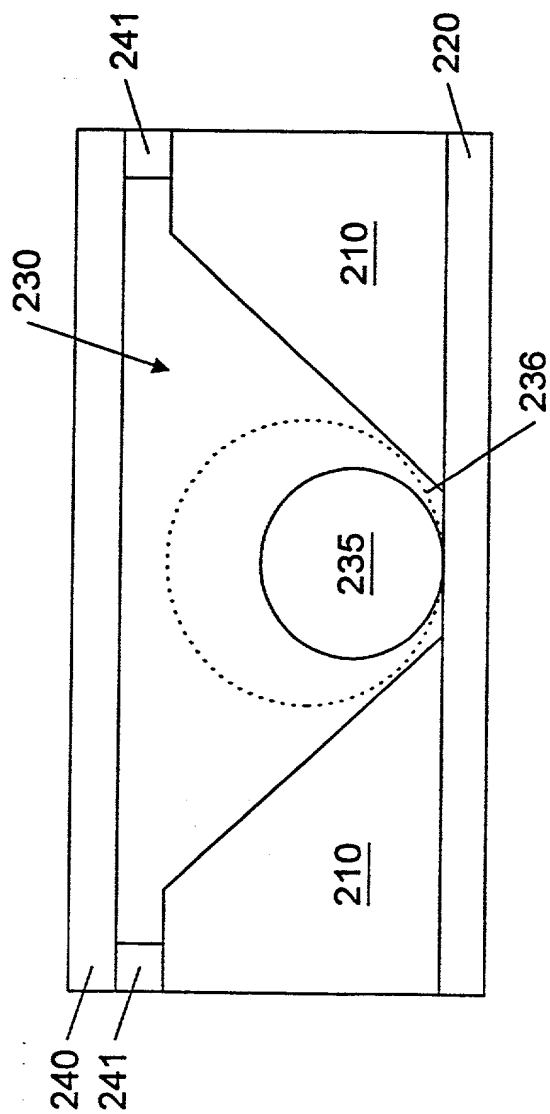


FIG. 2

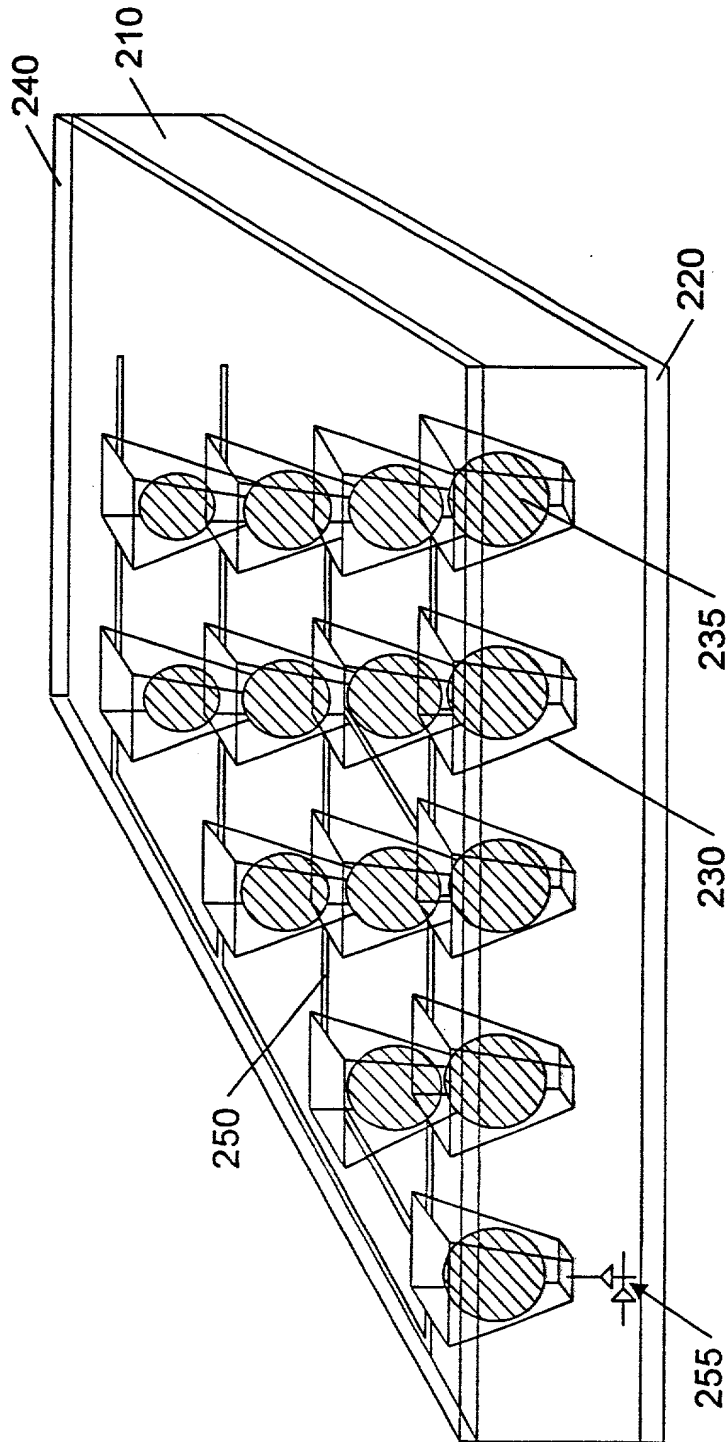


FIG. 3

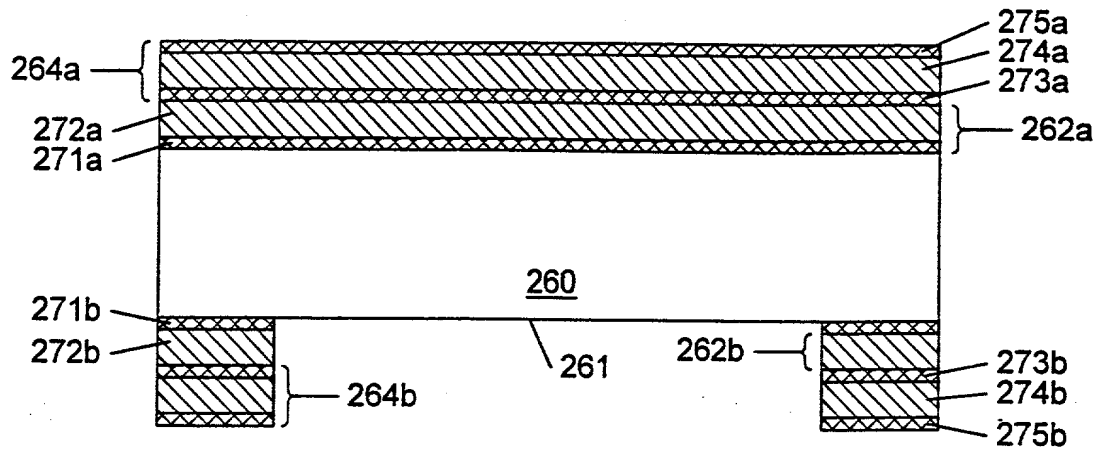


FIG. 4A

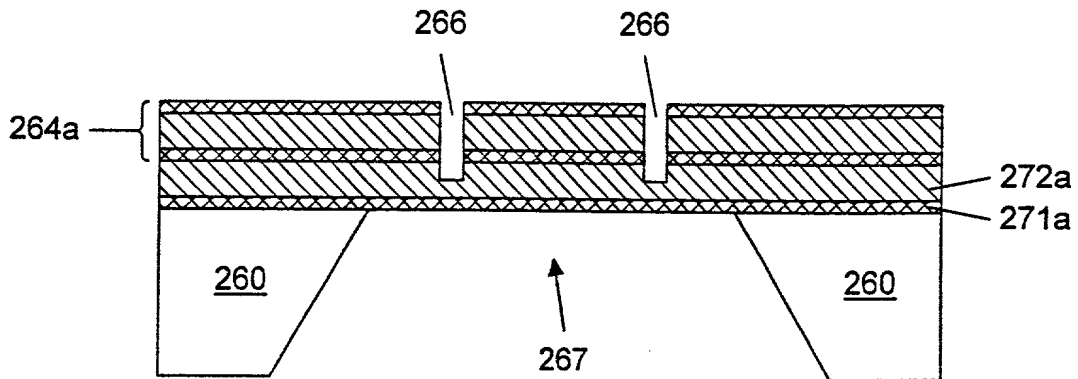


FIG. 4B

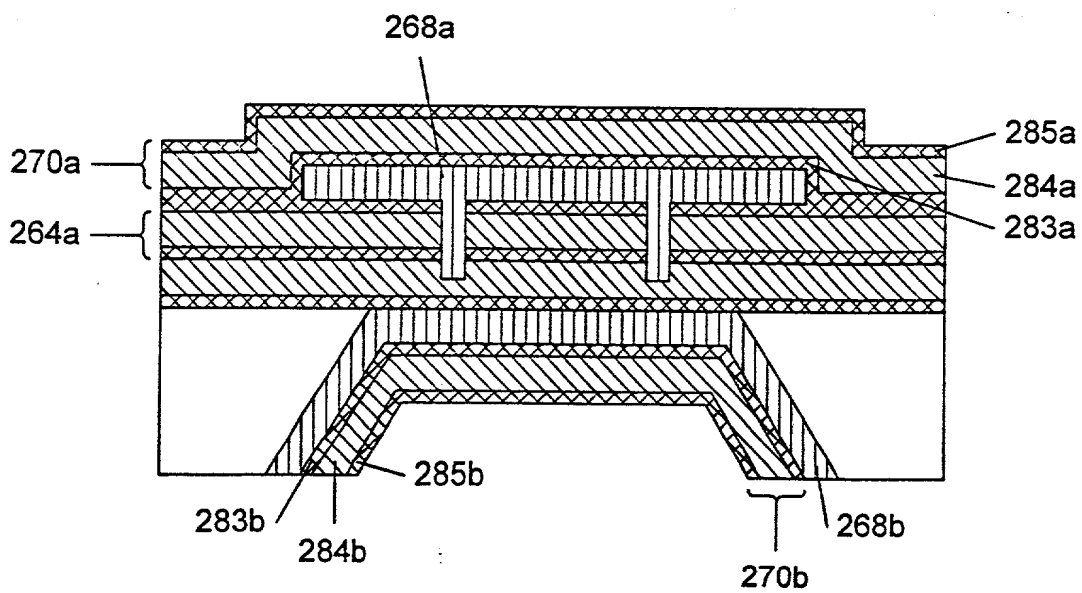


FIG. 4C

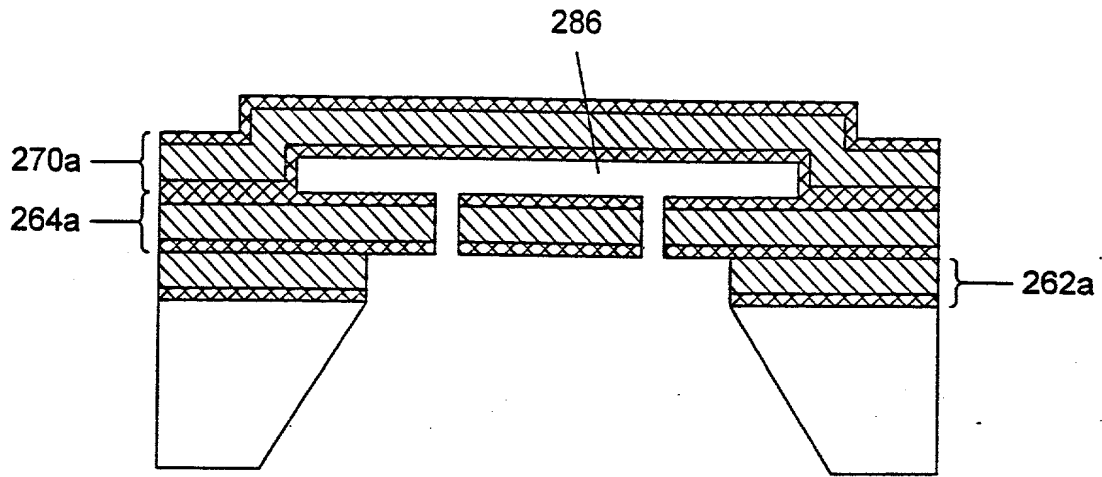


FIG. 4D

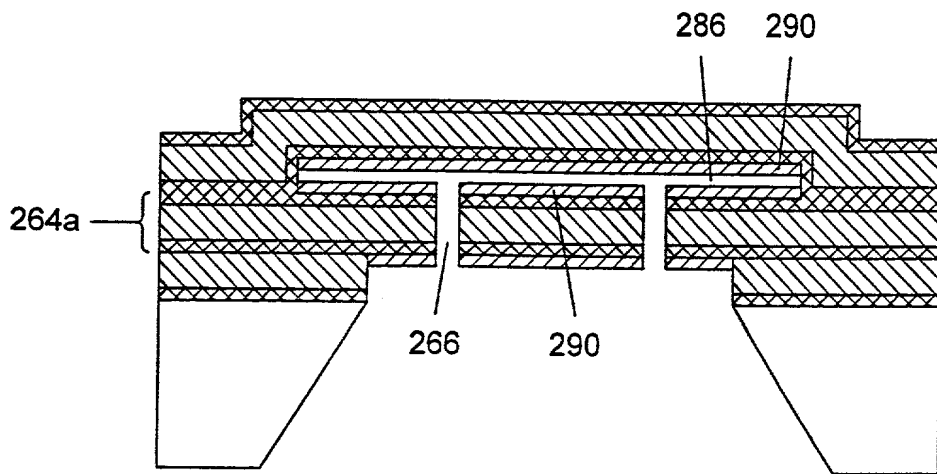


FIG. 4E

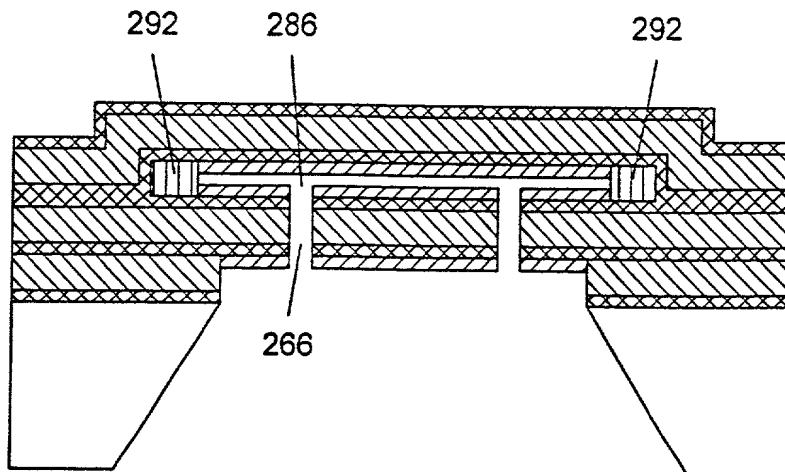


FIG. 4F

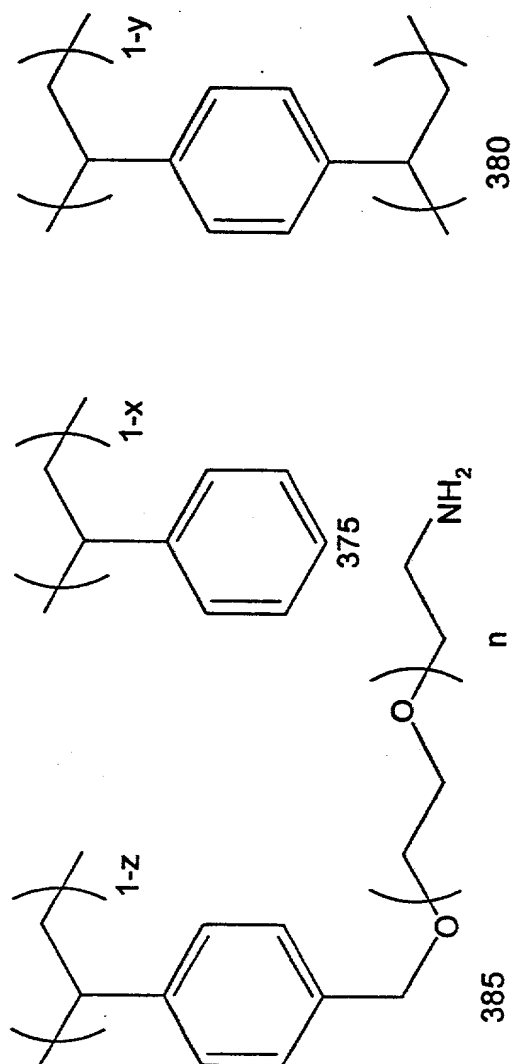


FIG. 5

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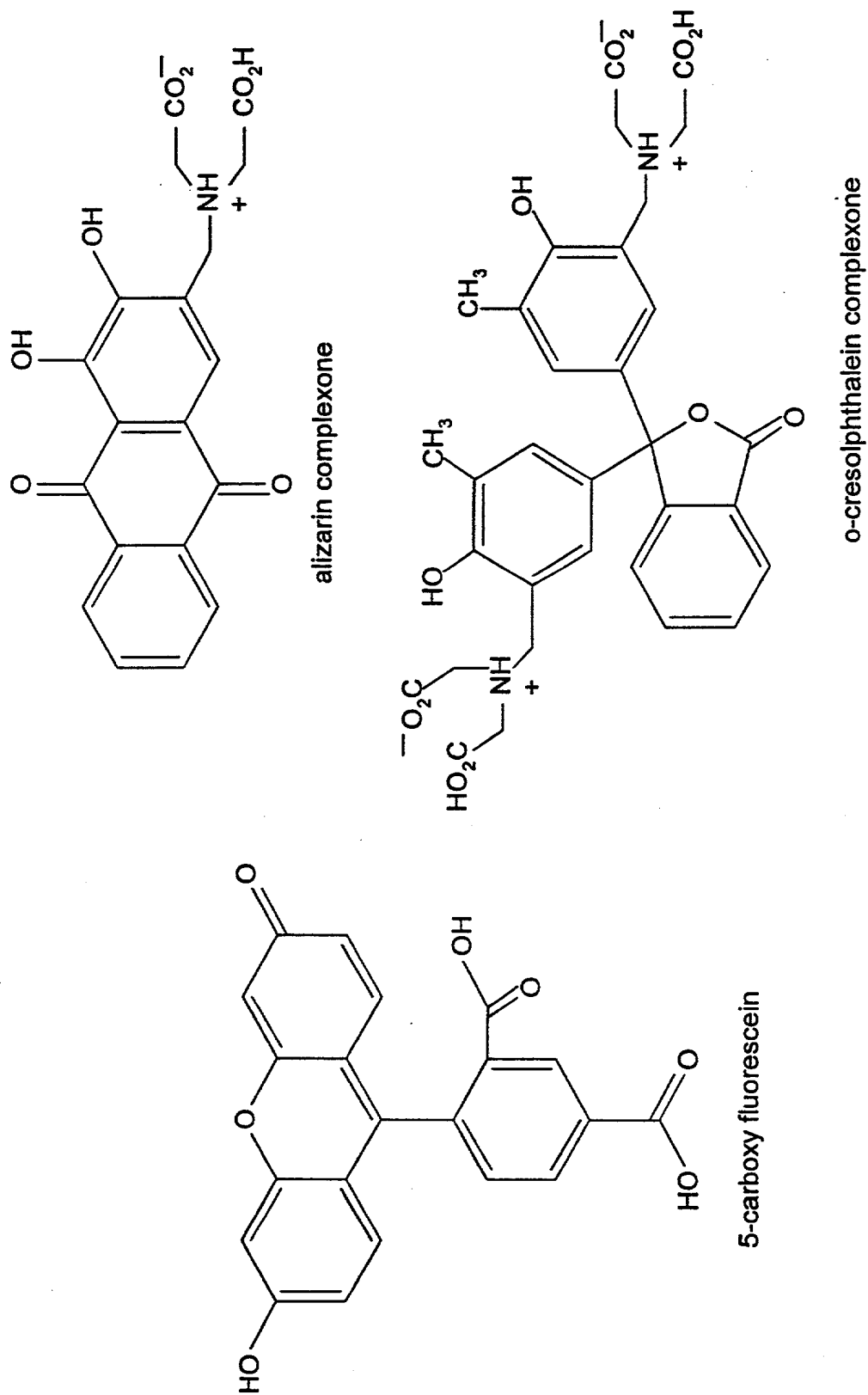


FIG. 6

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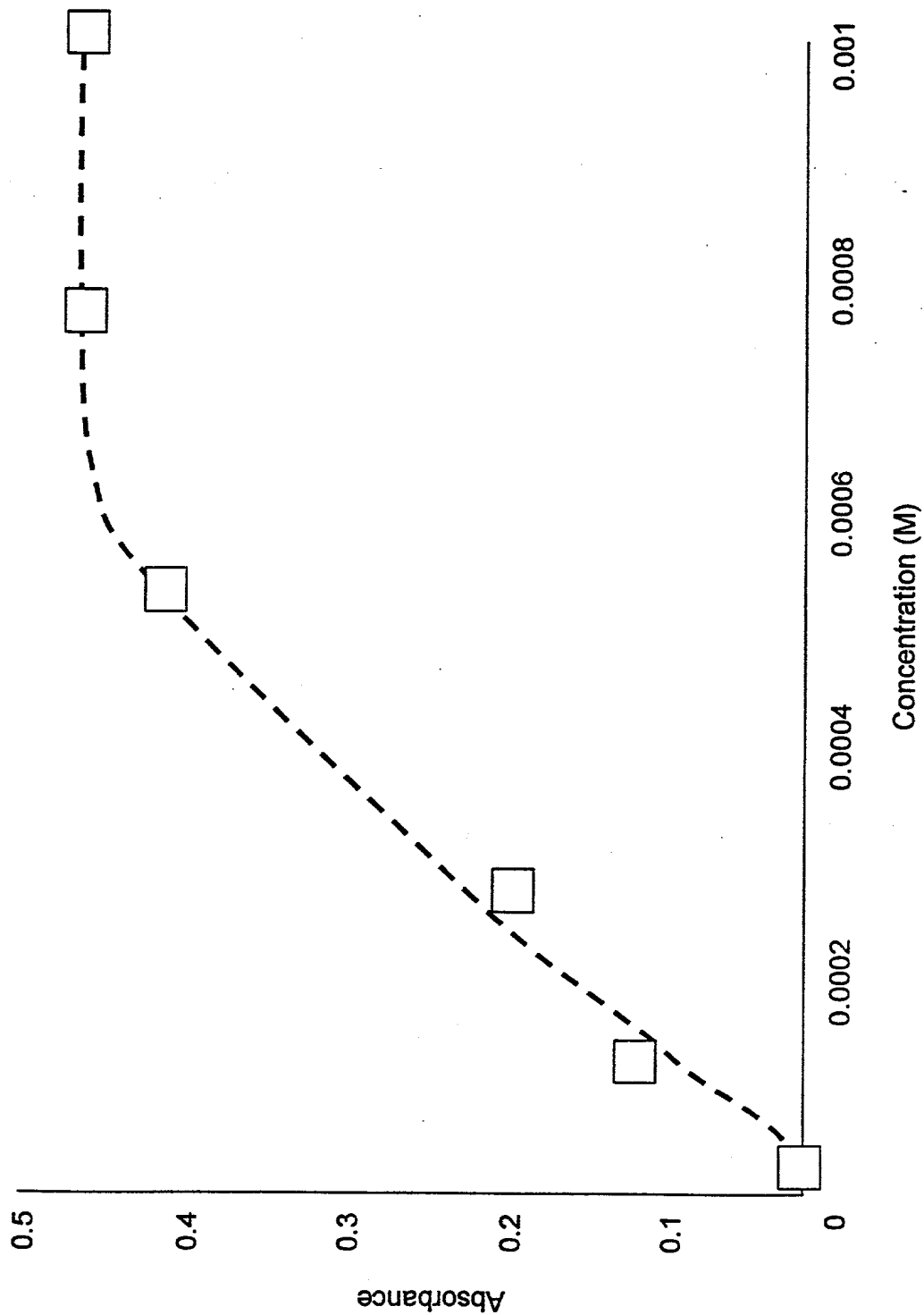


FIG. 7



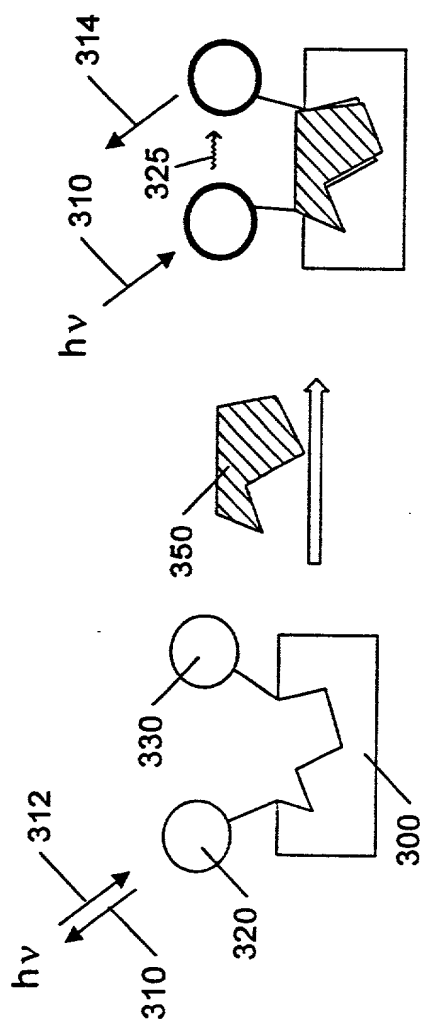


FIG. 8

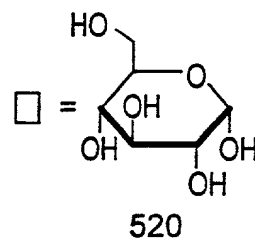
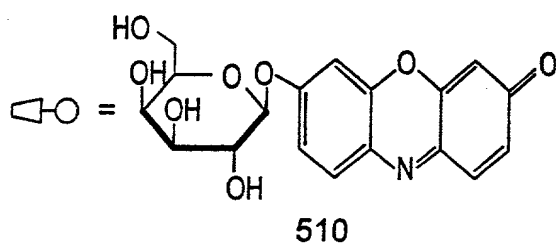
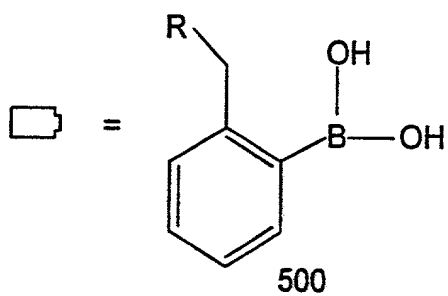
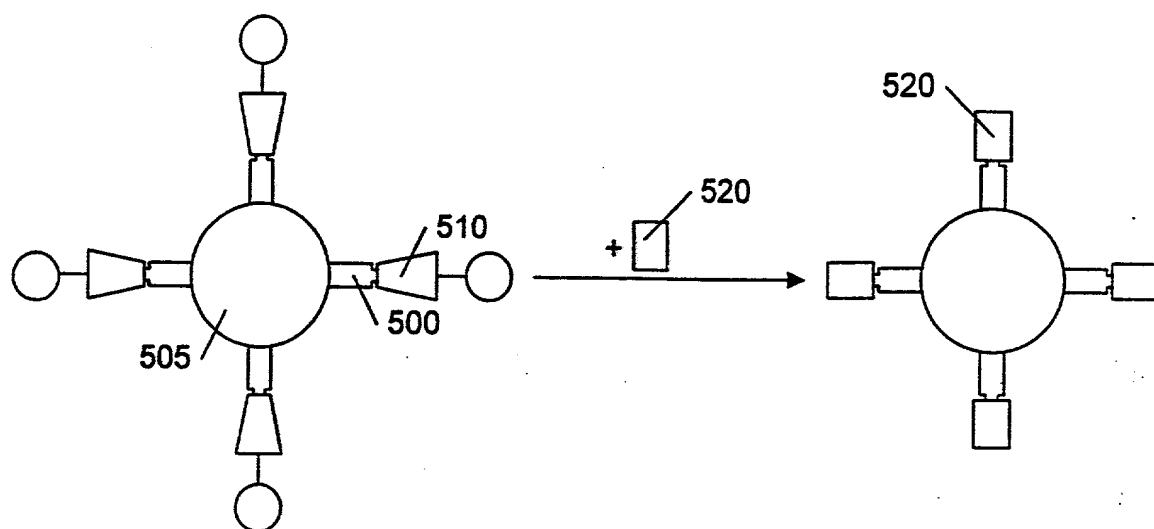
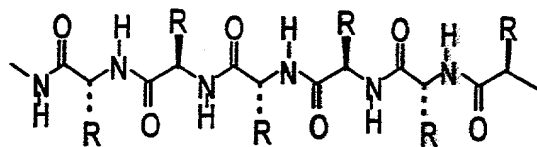
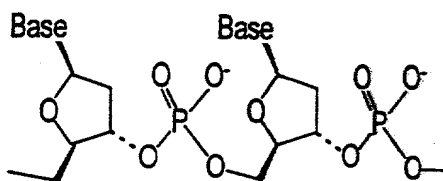


FIG. 9

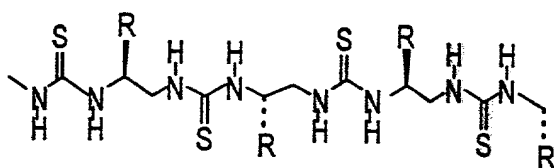
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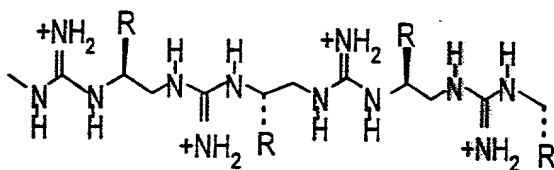
Peptides



Nucleotides



Polythioureas



Polyguanidiniums

FIG. 10

FIG. 10

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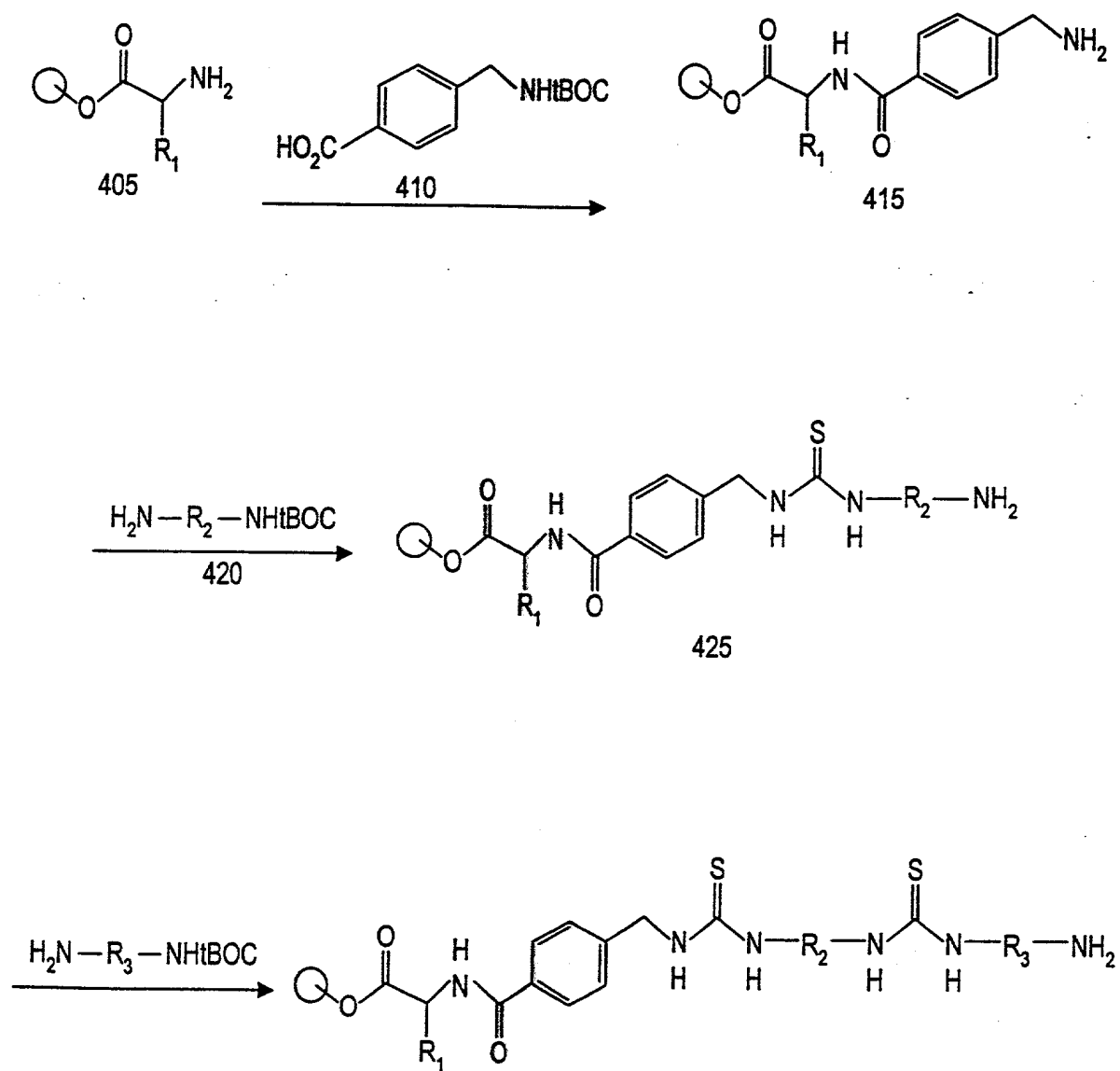


FIG. 11

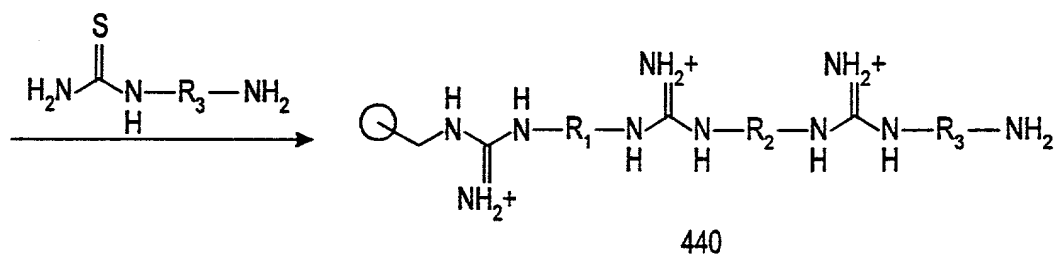
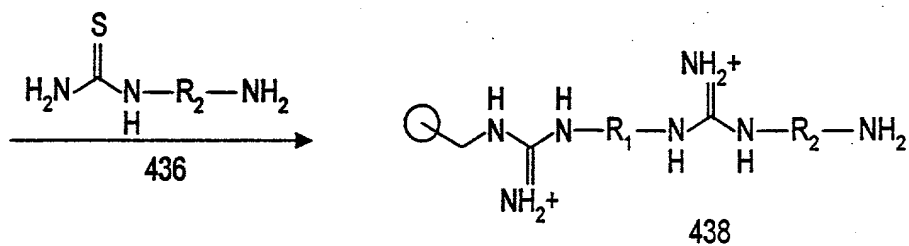
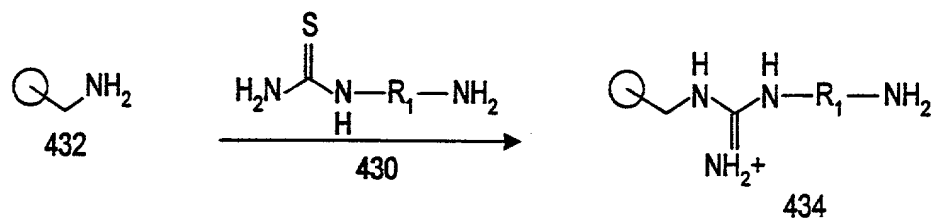


FIG. 12

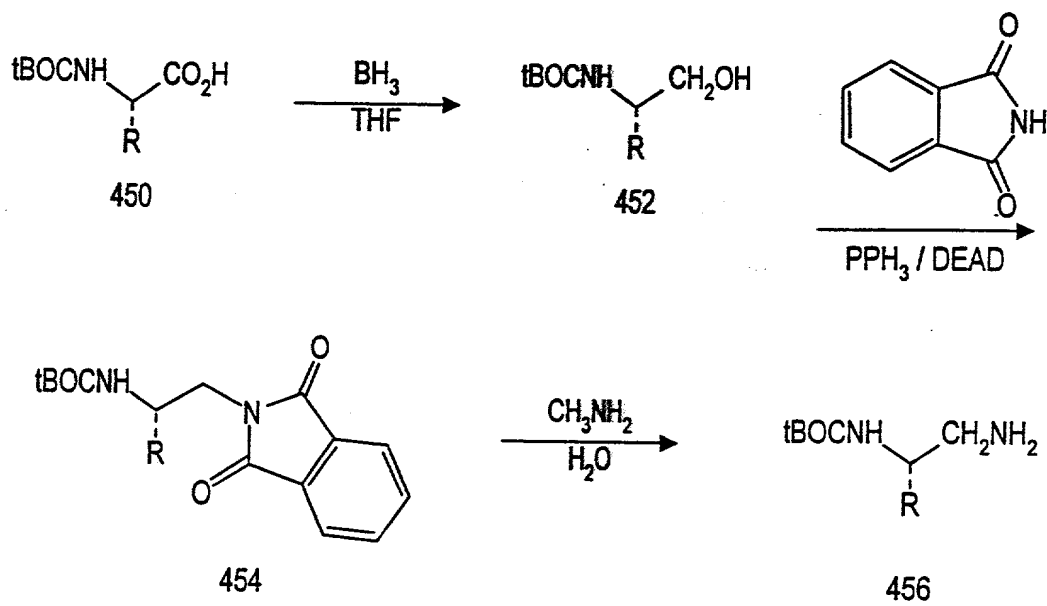


FIG. 13

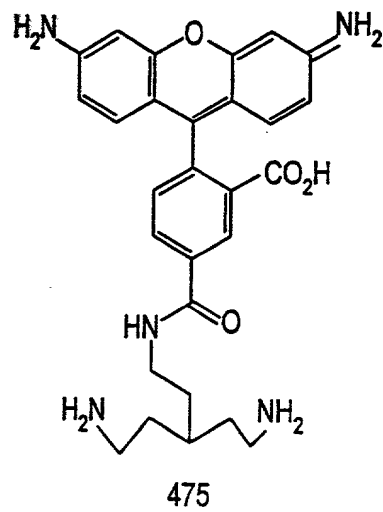
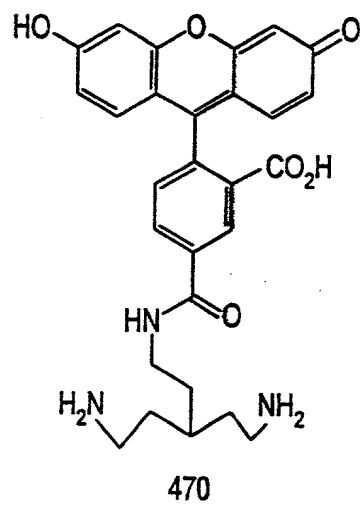


FIG. 14

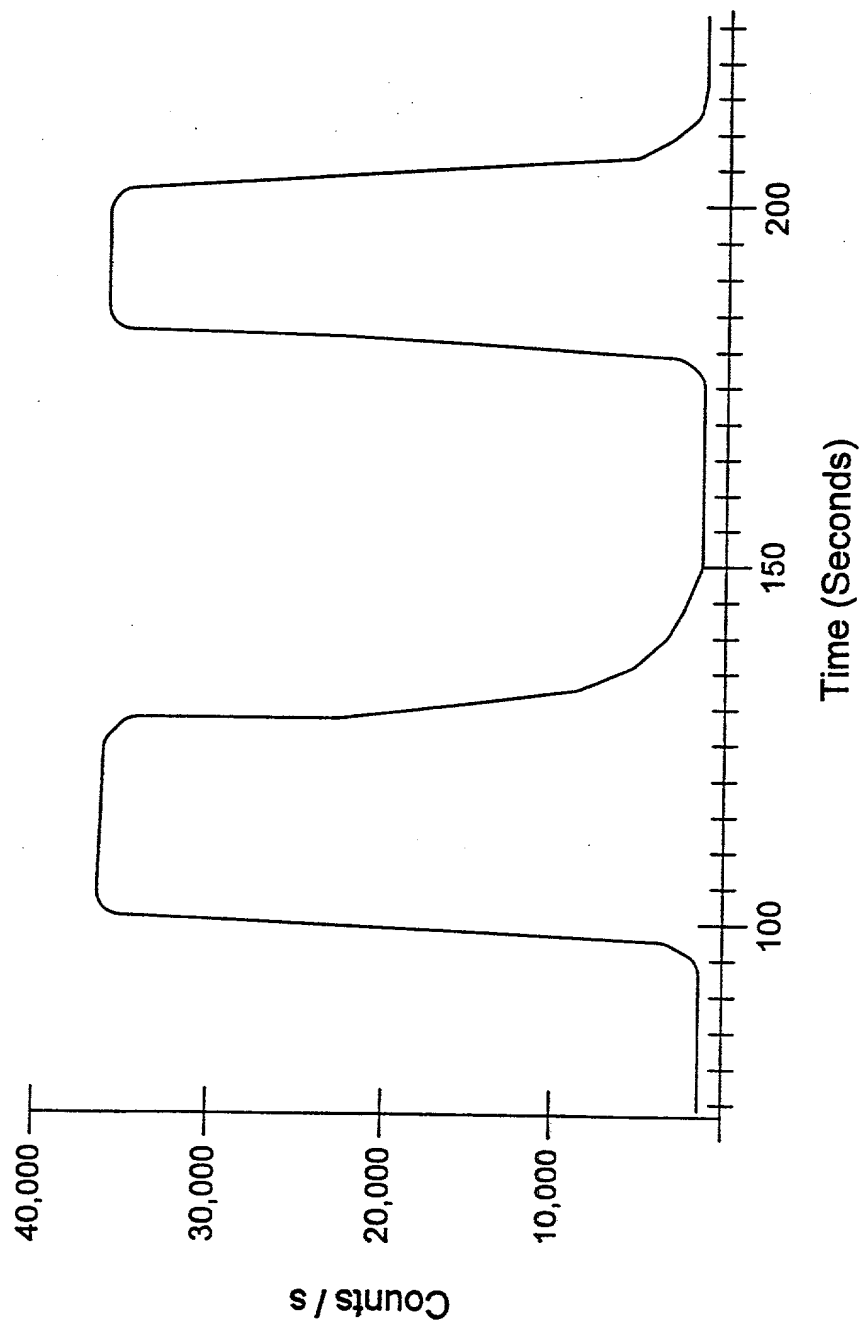


FIG. 15



| RESIN:<br>pH      Ion |                  | Blank | Alizarin | o-Cresol-phthalein | Fluorescein | Alizarin-Ce <sup>3+</sup> complex |
|-----------------------|------------------|-------|----------|--------------------|-------------|-----------------------------------|
| 2                     | none             |       |          |                    |             |                                   |
| 2                     | Ca <sup>2+</sup> |       |          |                    |             |                                   |
| 7                     | none             |       |          |                    |             |                                   |
| 7                     | Ca <sup>2+</sup> |       |          |                    |             |                                   |
| 7                     | F <sup>-</sup>   |       |          |                    |             |                                   |
| 12                    | none             |       |          |                    |             |                                   |
| 12                    | Ca <sup>2+</sup> |       |          |                    |             |                                   |
| 12                    | F <sup>-</sup>   |       |          |                    |             |                                   |

FIG. 16

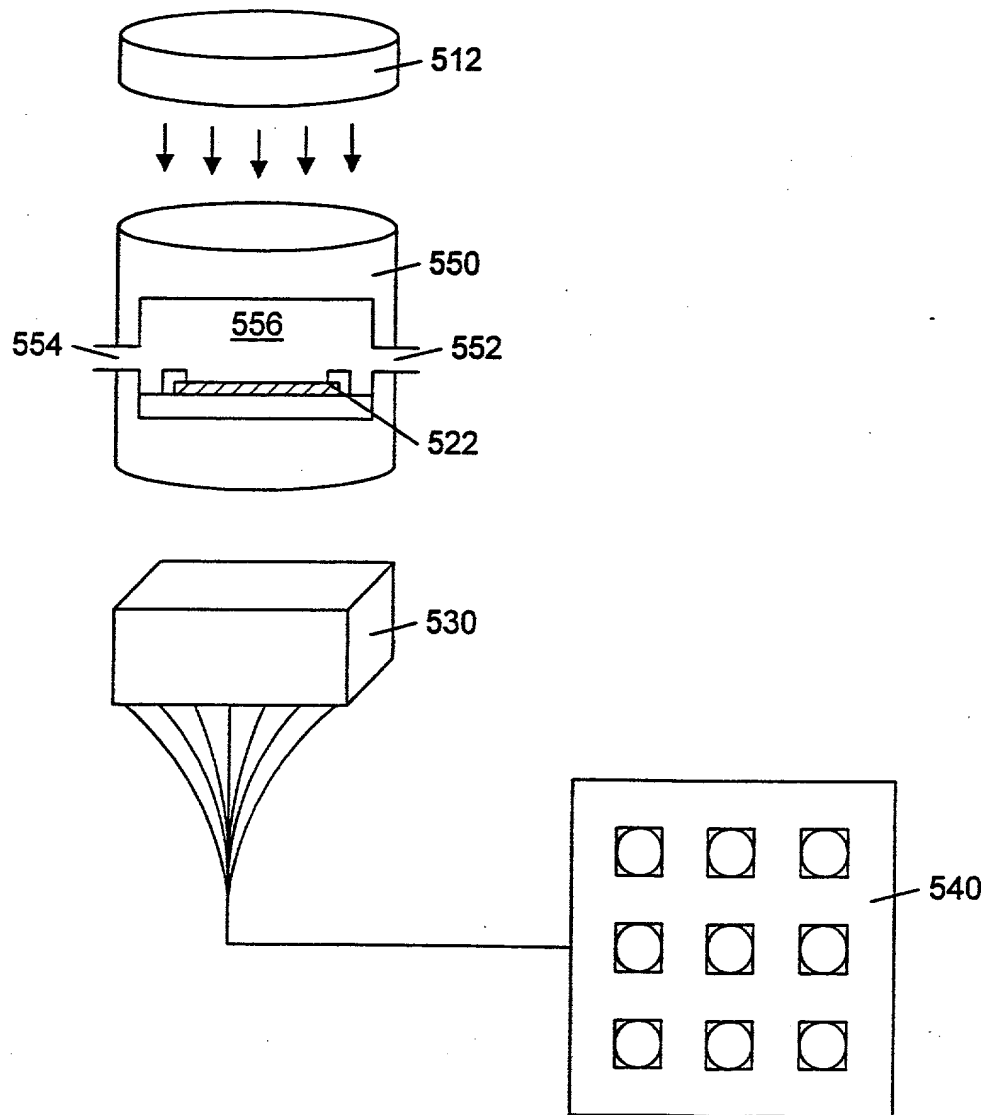


FIG. 17

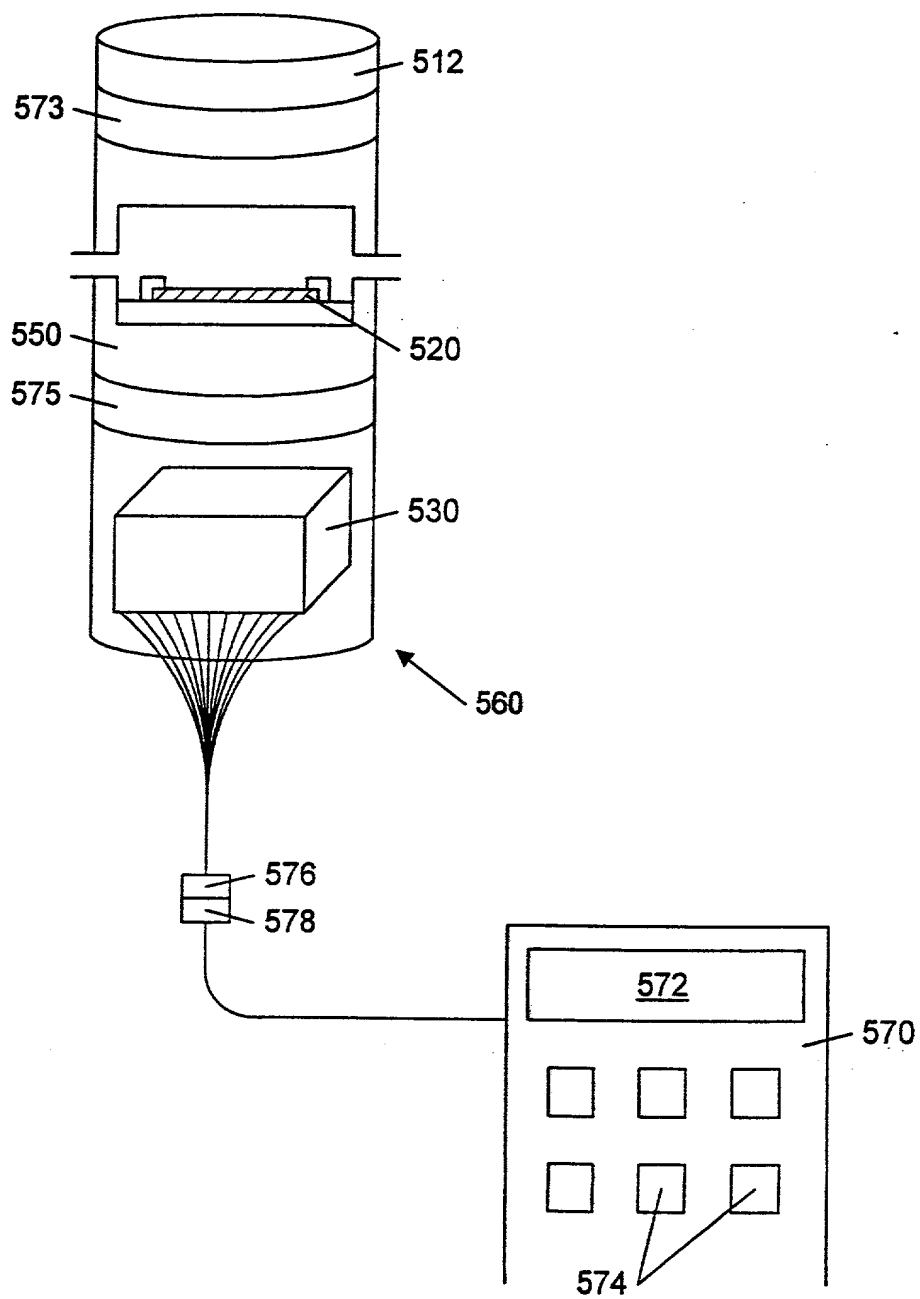


FIG. 18

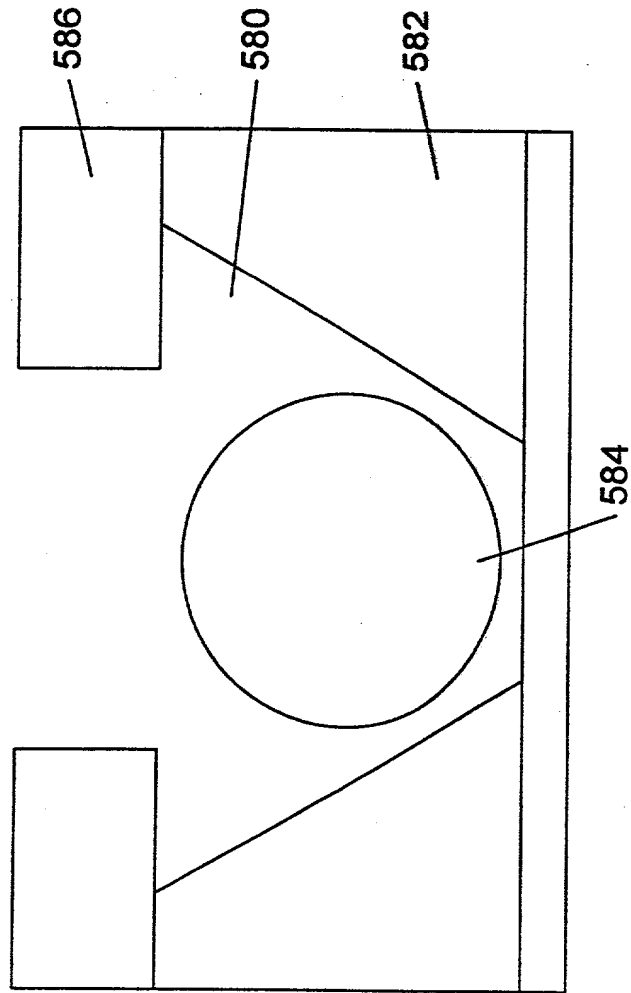


FIG. 19

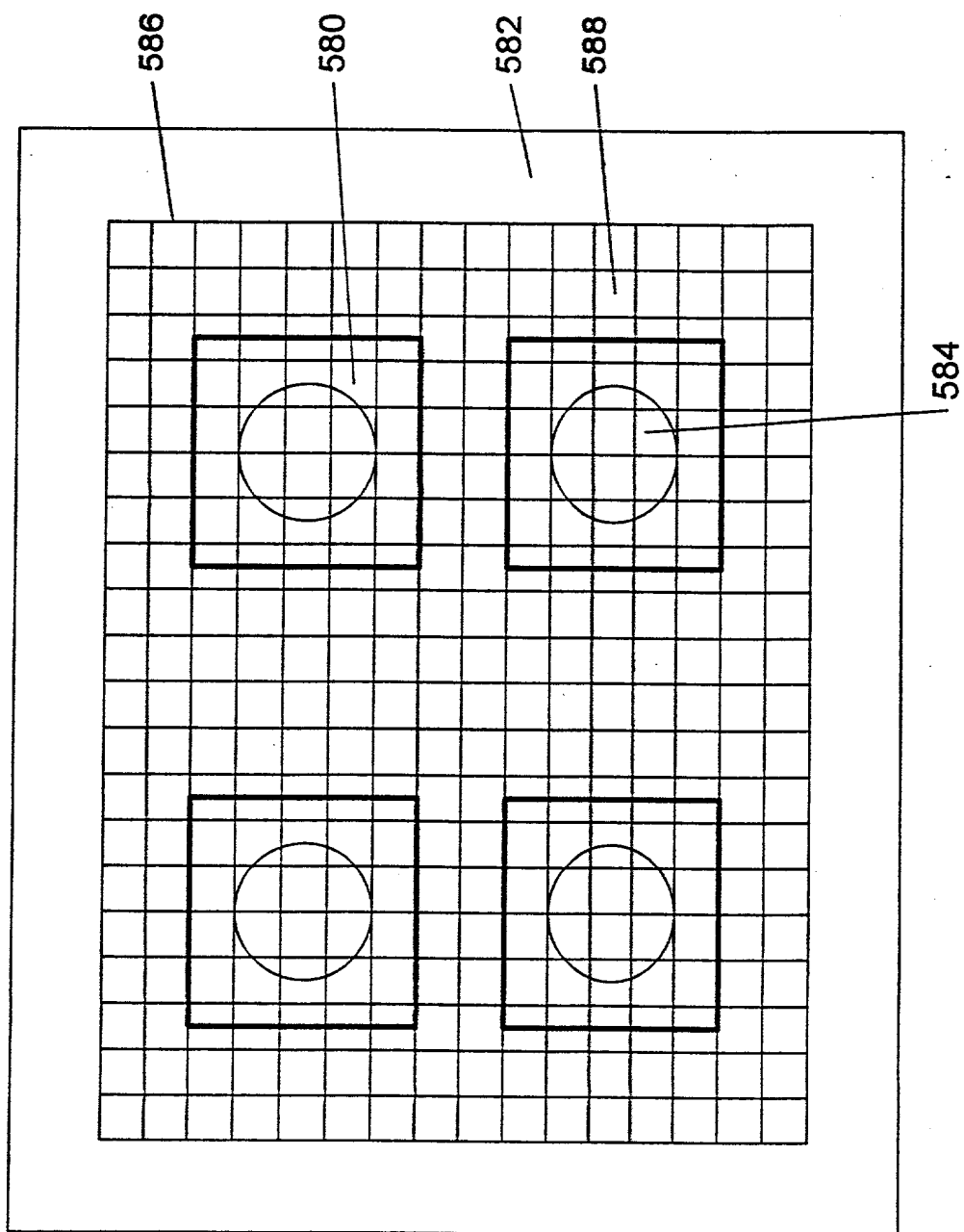


FIG. 20

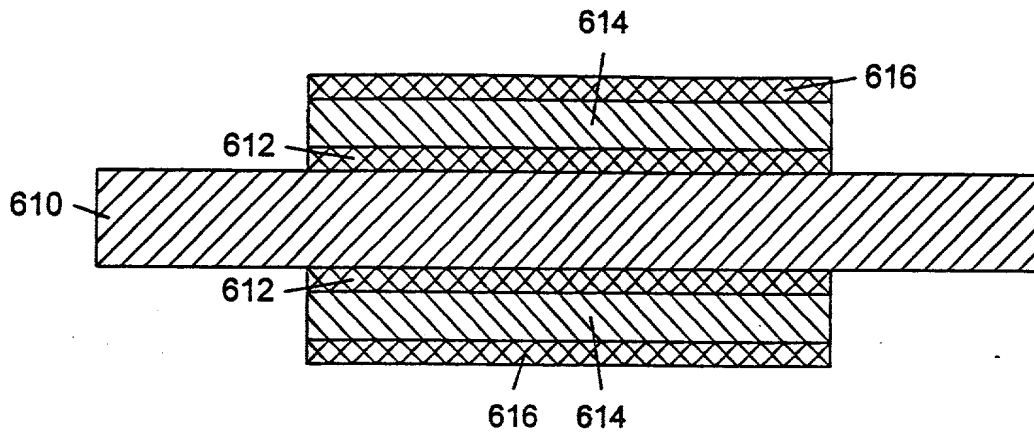


FIG. 21A

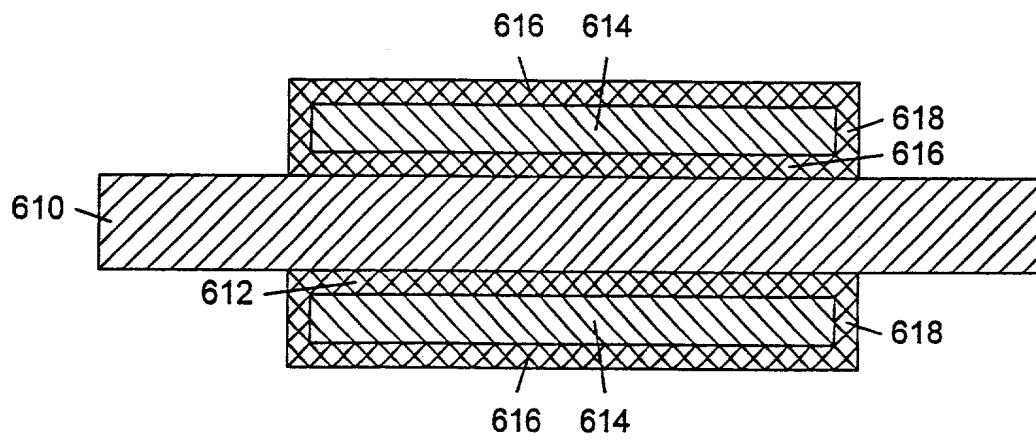


FIG. 21B

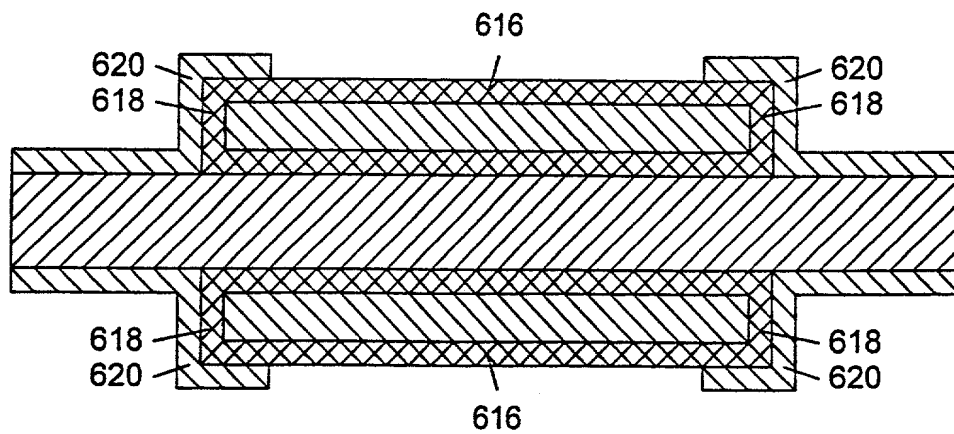


FIG. 21C

FIG. 21A

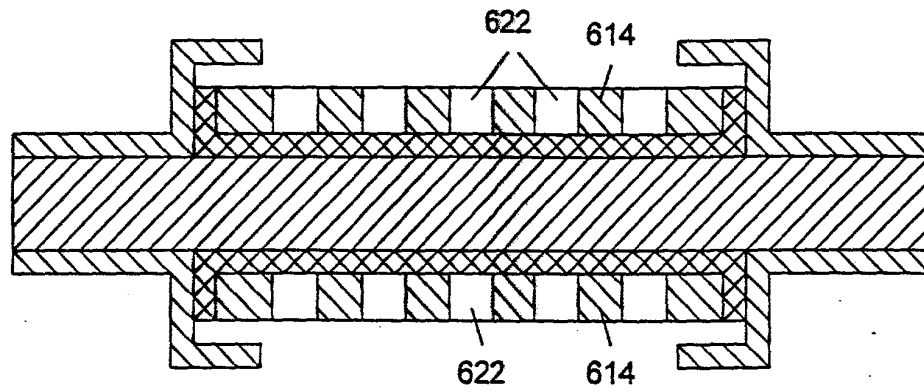


FIG. 21D

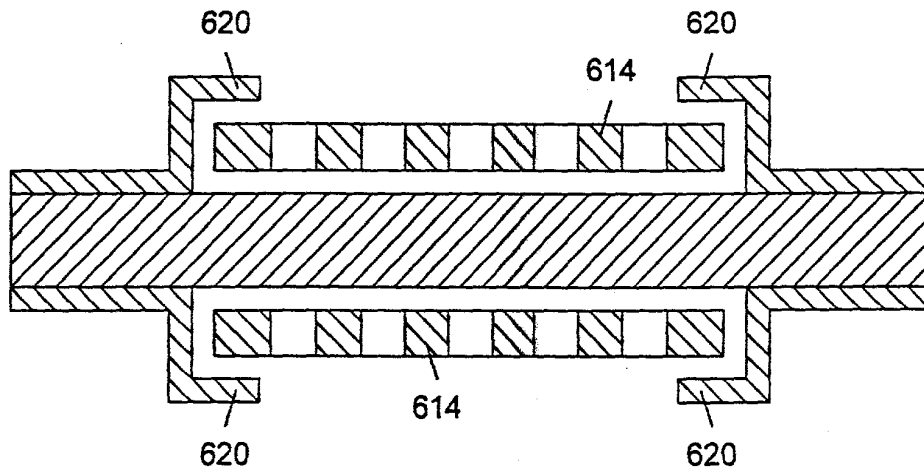


FIG. 21E

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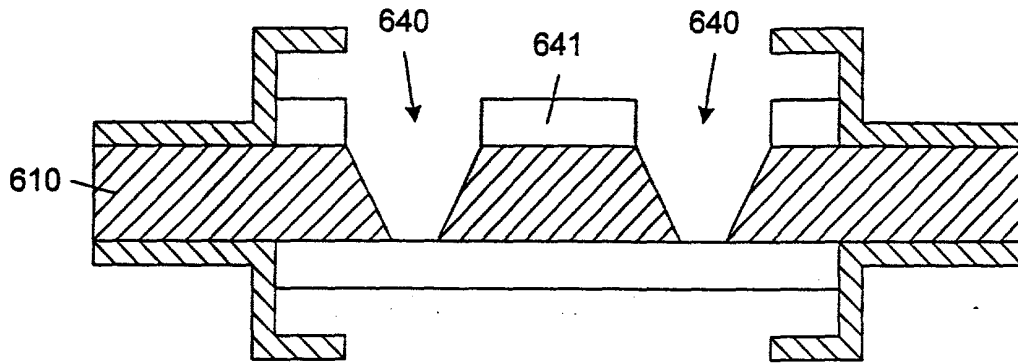


FIG. 21F

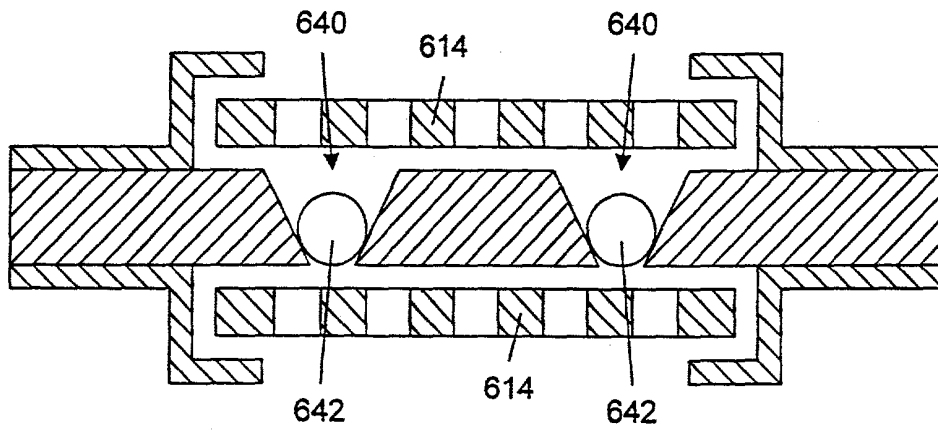


FIG. 21G



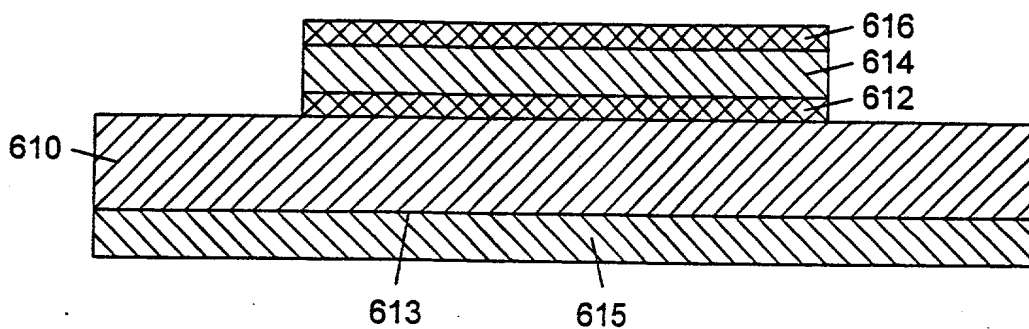


FIG. 22A

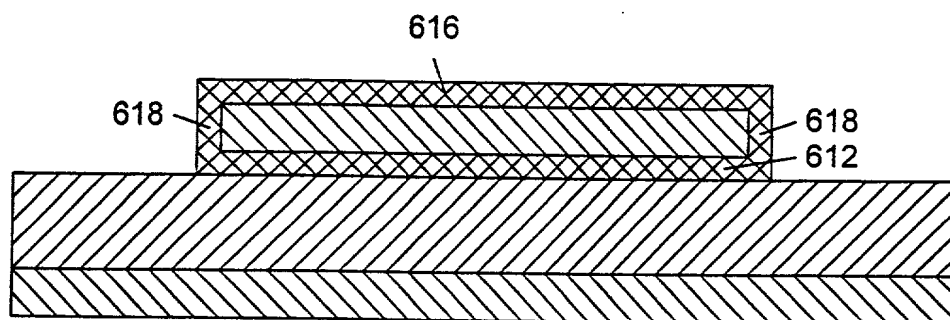


FIG. 22B

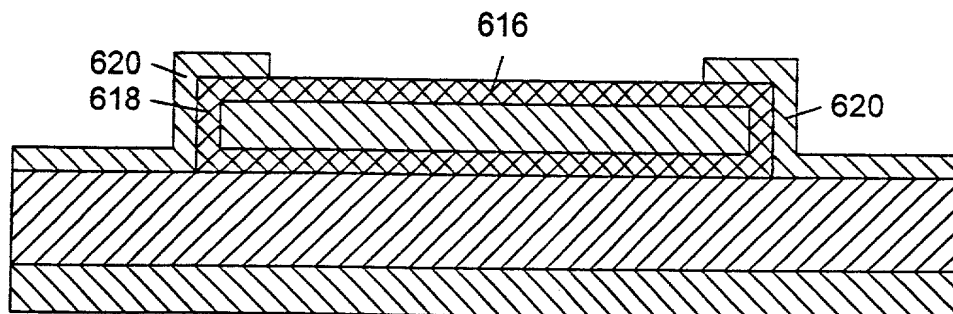


FIG. 22C

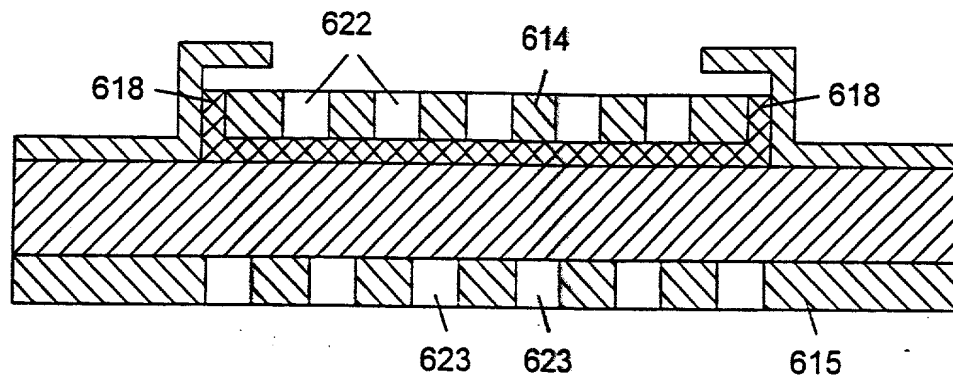


FIG. 22D

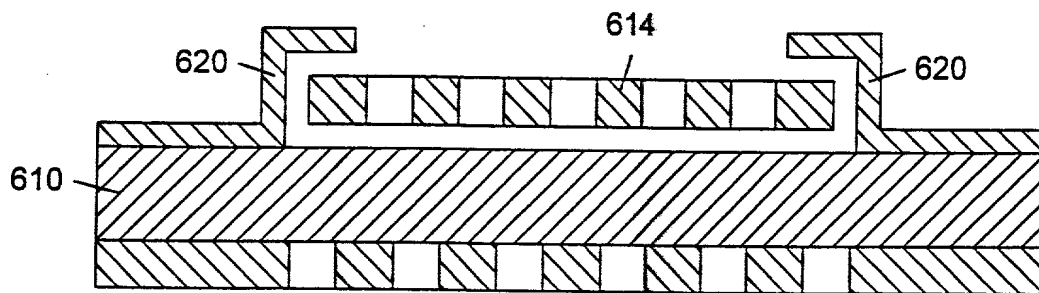


FIG. 22E

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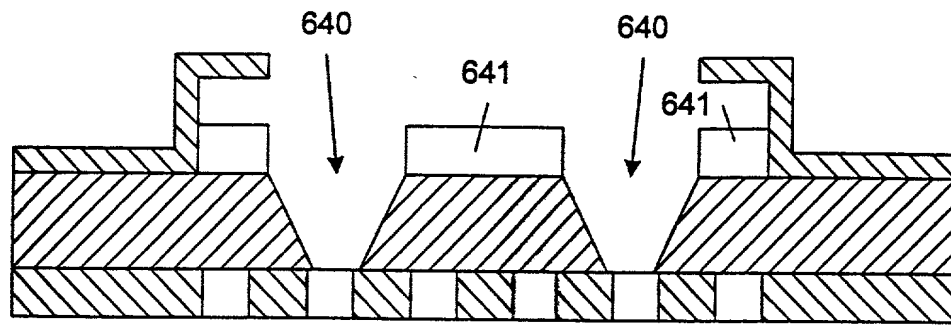


FIG. 22F

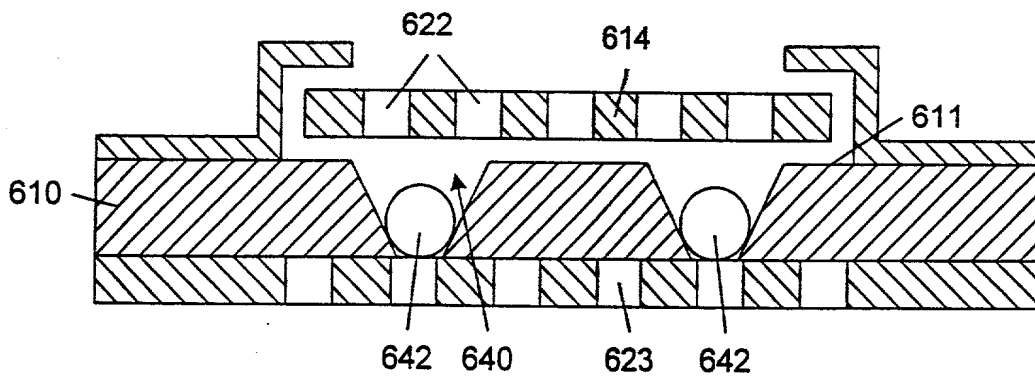


FIG. 22G

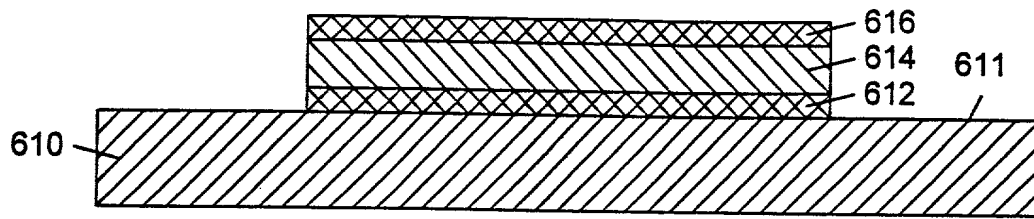


FIG. 23A

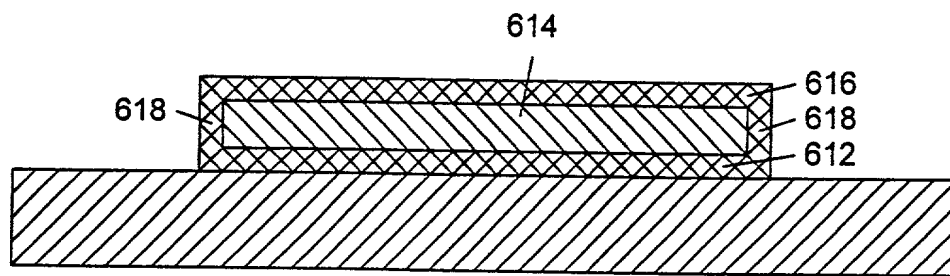


FIG. 23B

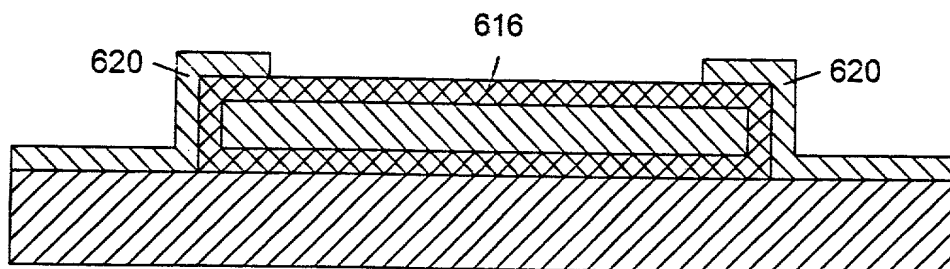


FIG. 23C

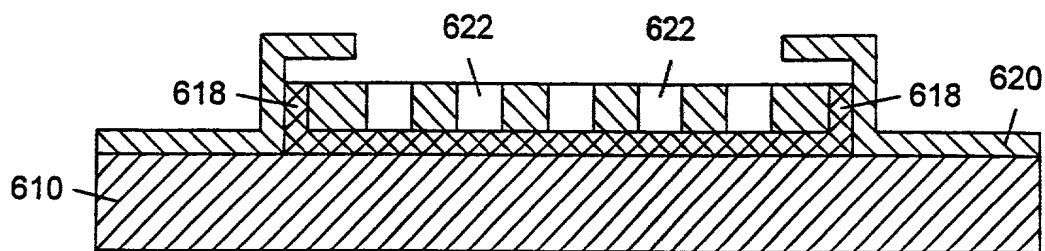


FIG. 23D

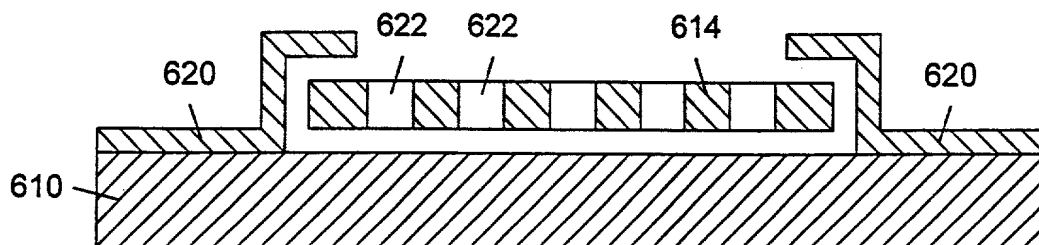


FIG. 23E

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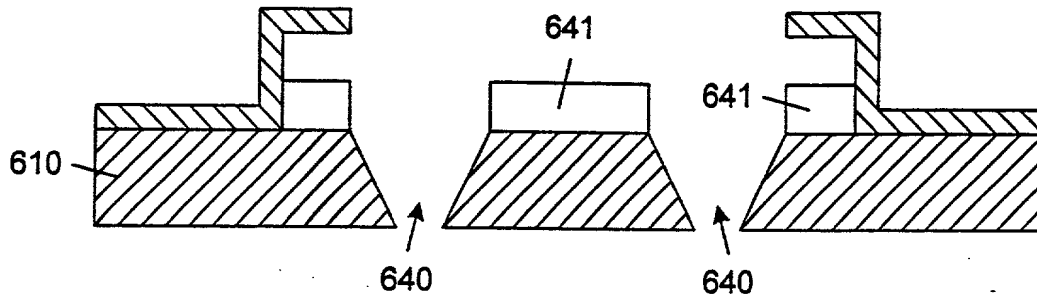


FIG. 23F

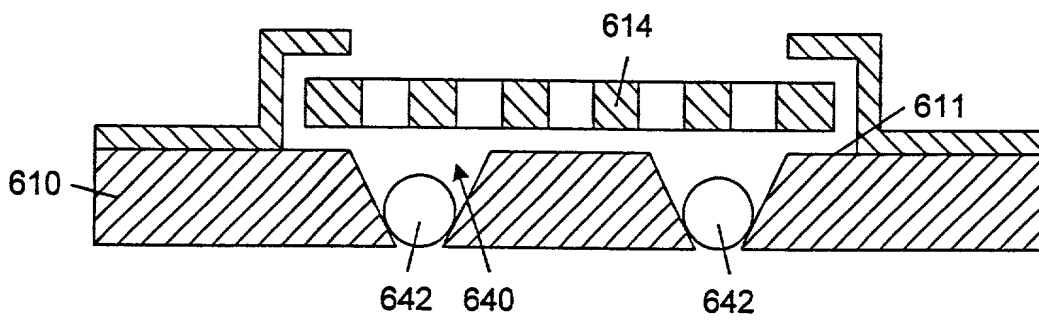


FIG. 23G

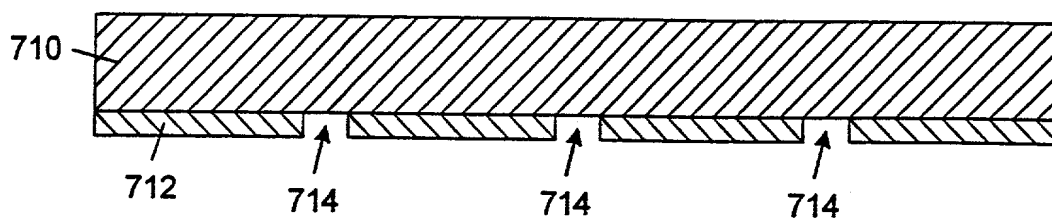


FIG. 24A

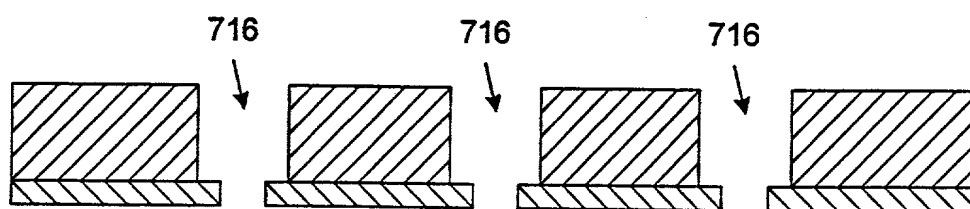


FIG. 24B

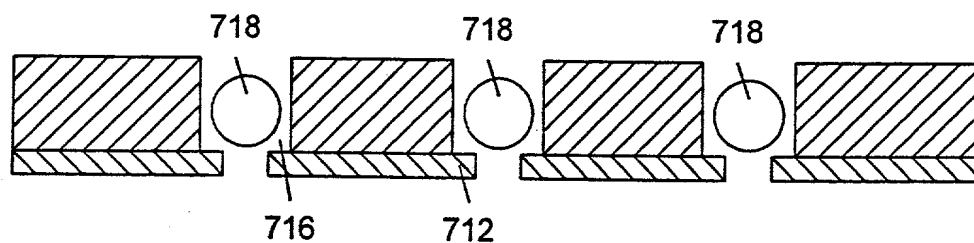


FIG. 24C

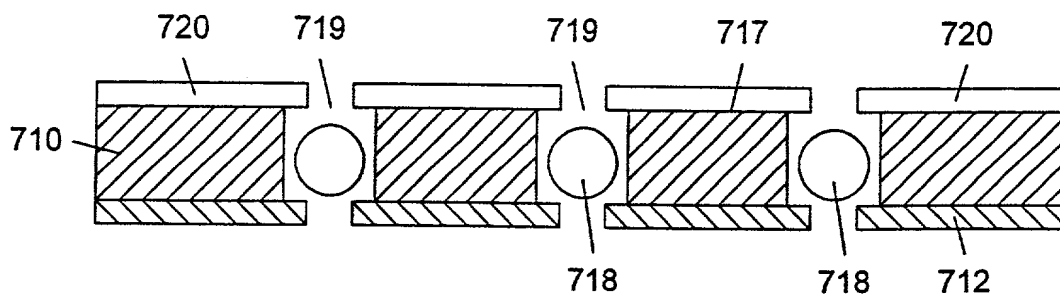


FIG. 24D

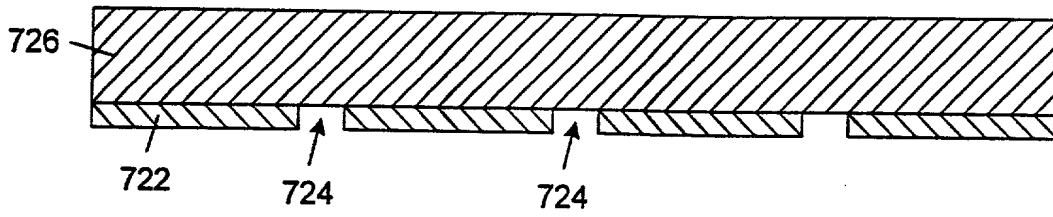


FIG. 25A

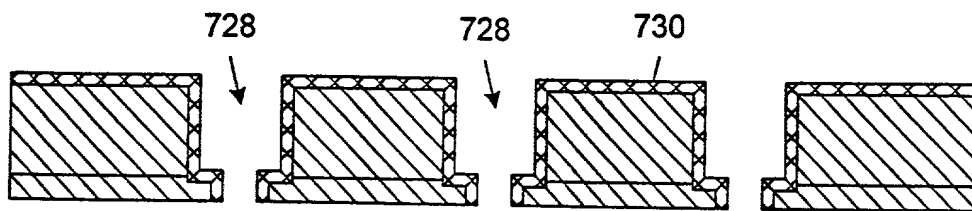


FIG. 25B

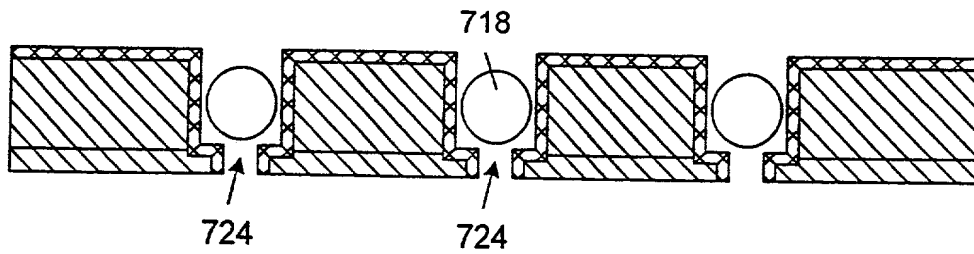


FIG. 25C

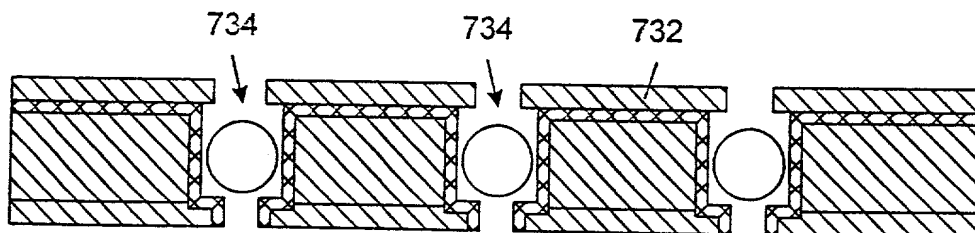


FIG. 25D

TOP SECRET



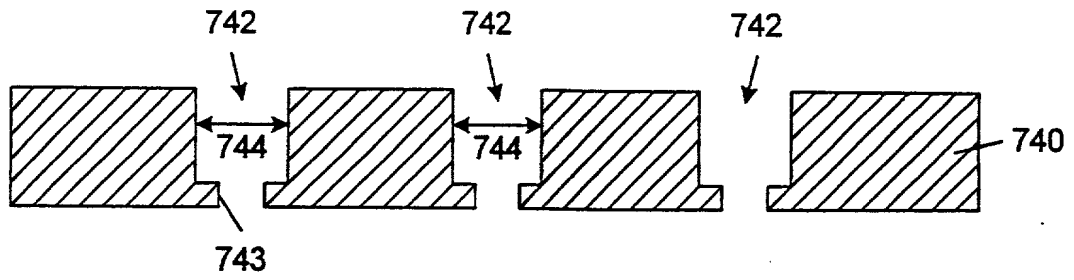


FIG. 26A

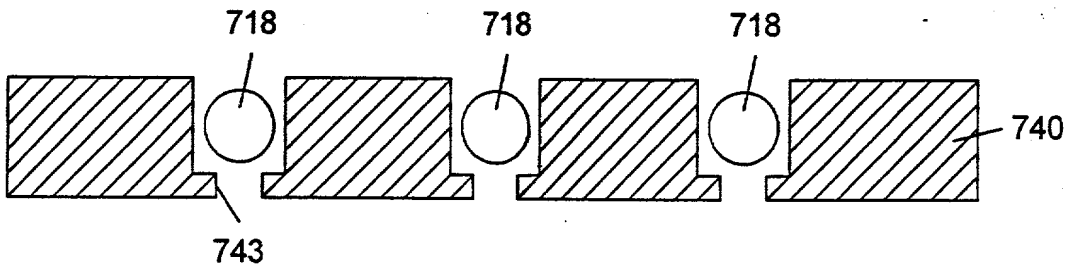


FIG. 26B

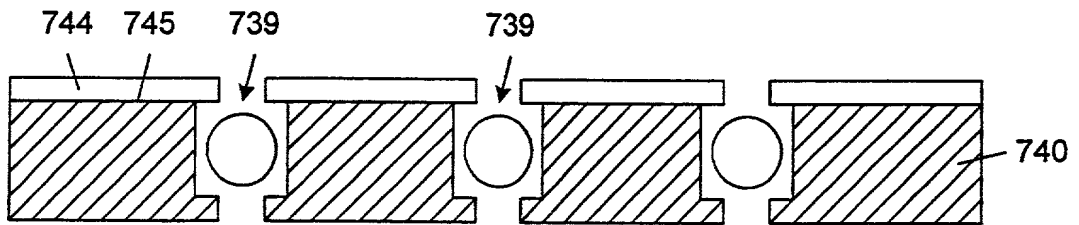


FIG. 26C

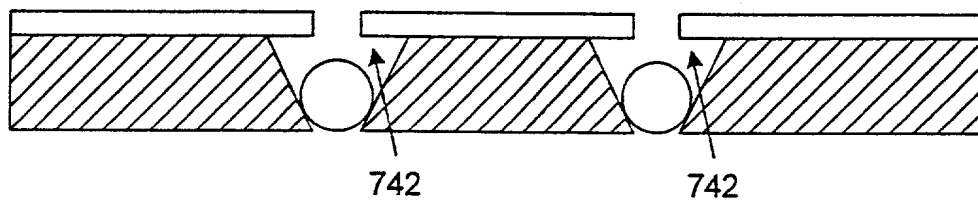


FIG. 26D

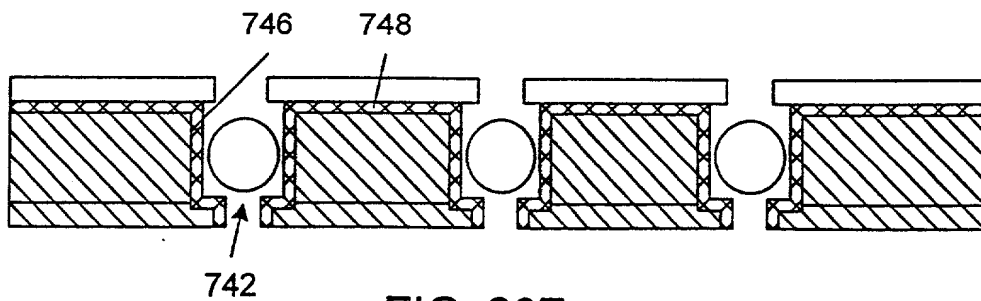


FIG. 26E

FIG. 26A

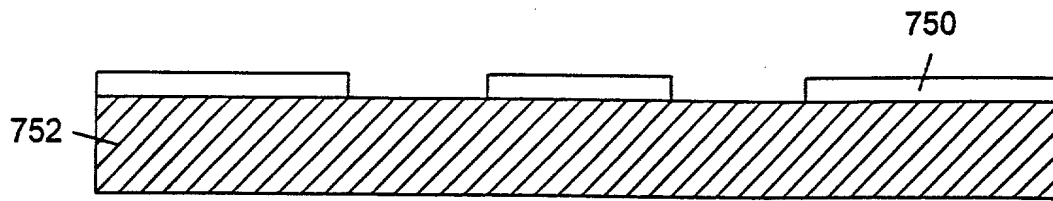


FIG. 27A

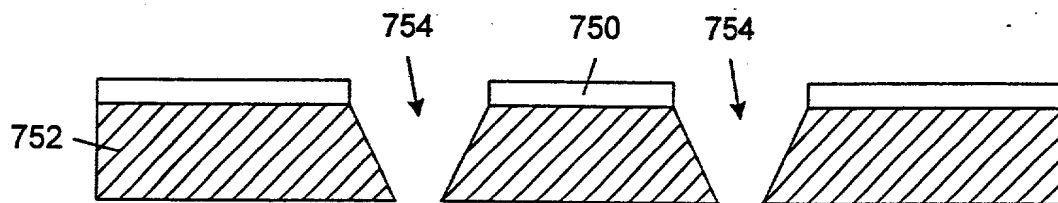


FIG. 27B

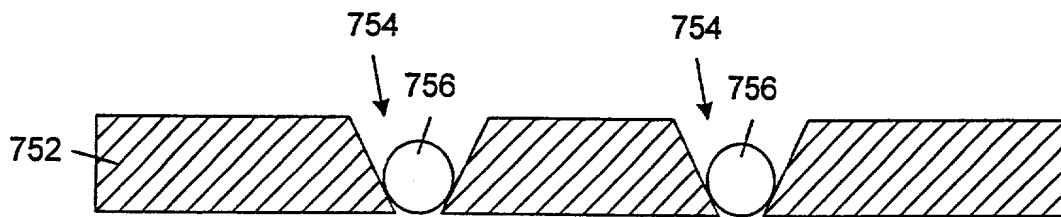


FIG. 27C

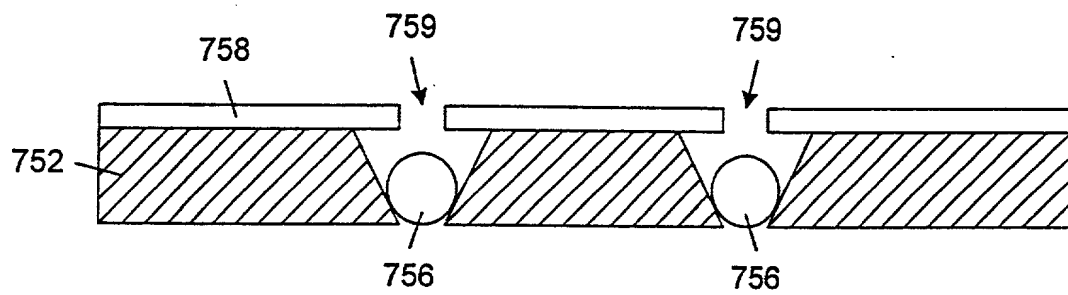


FIG. 27D

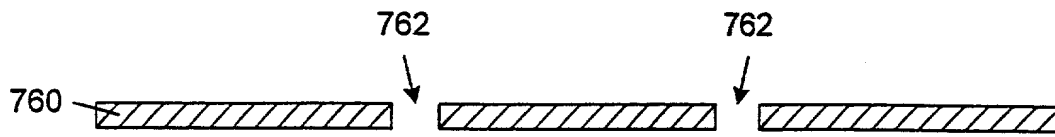


FIG. 28A

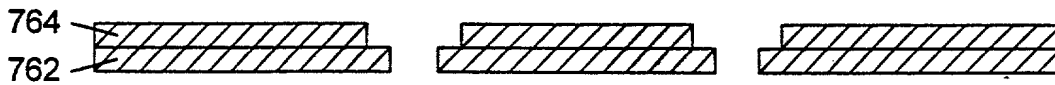


FIG. 28B

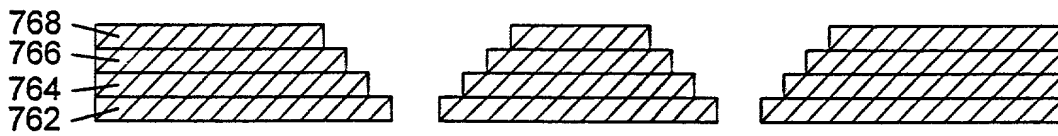


FIG. 28C

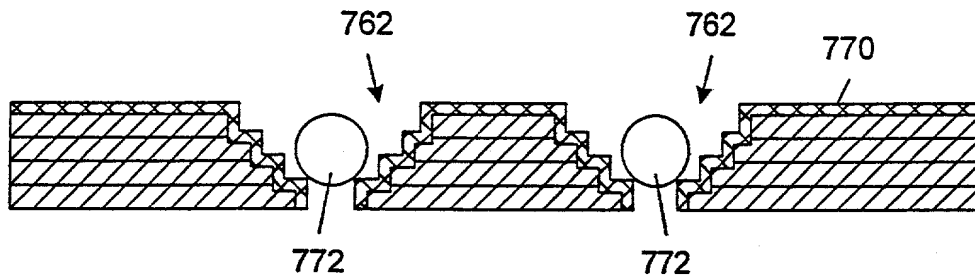


FIG. 28D

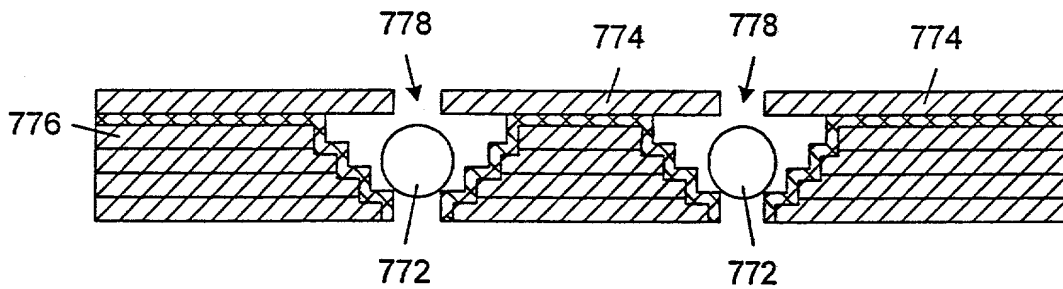


FIG. 28E

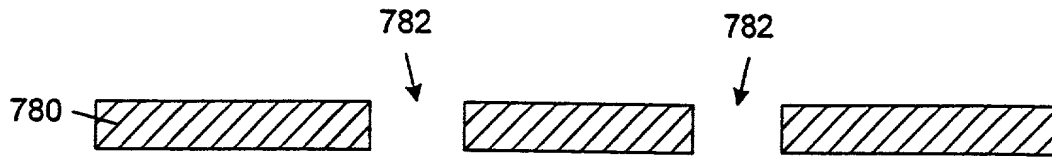


FIG. 29A

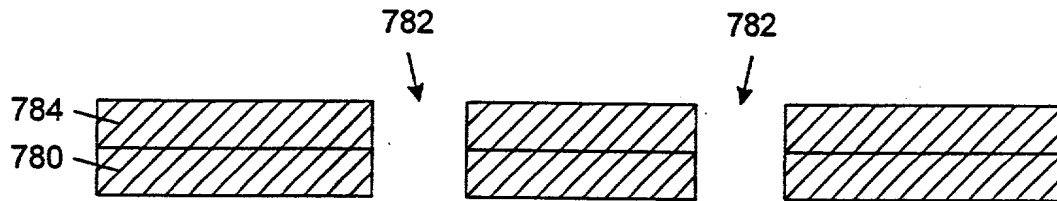


FIG. 29B

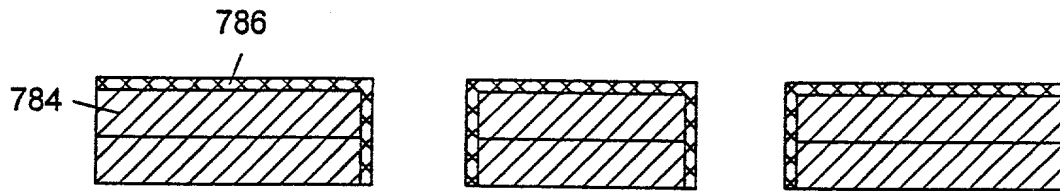


FIG. 29C

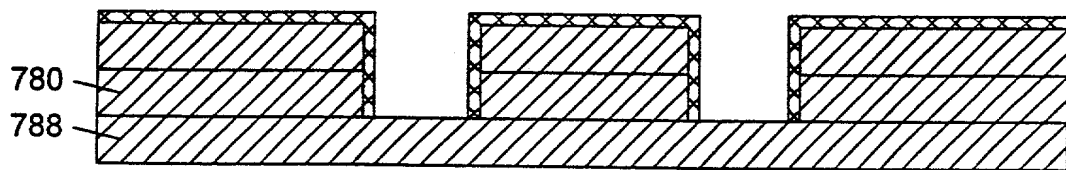


FIG. 29D

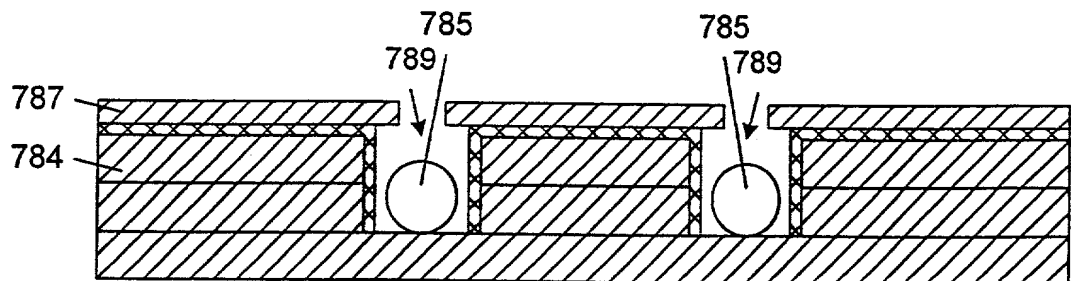


FIG. 29E

FIG. 29A

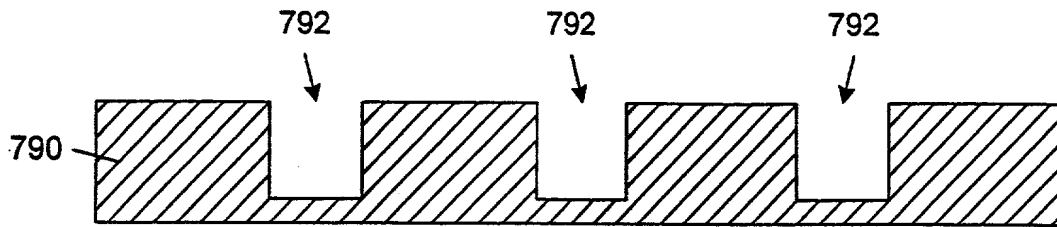


FIG. 30A

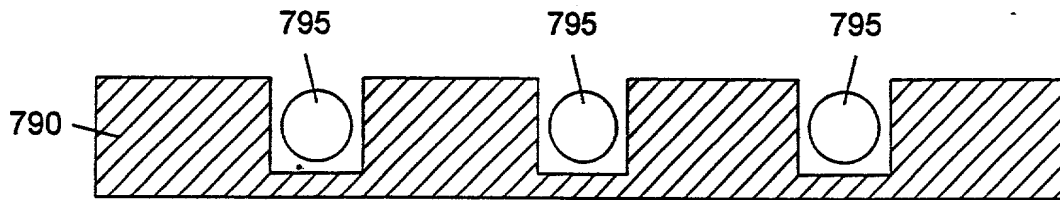


FIG. 30B

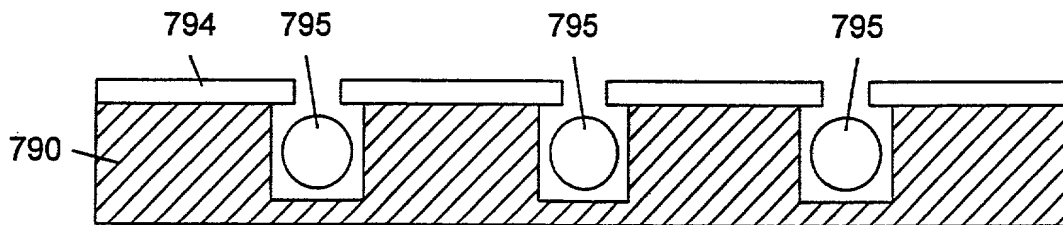


FIG. 30C

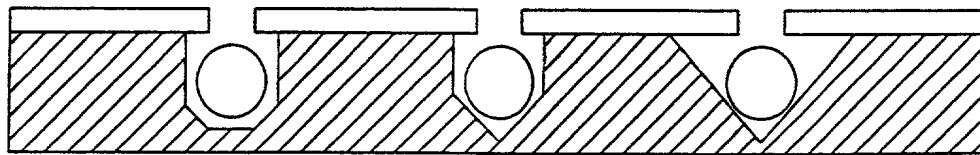


FIG. 30D

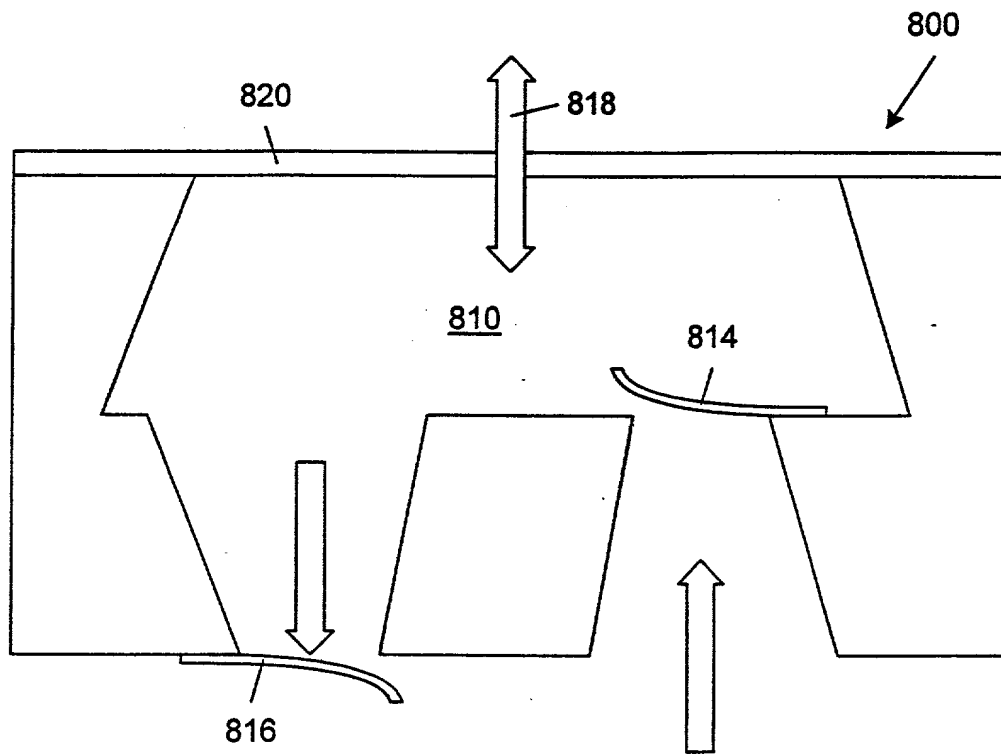


FIG. 31

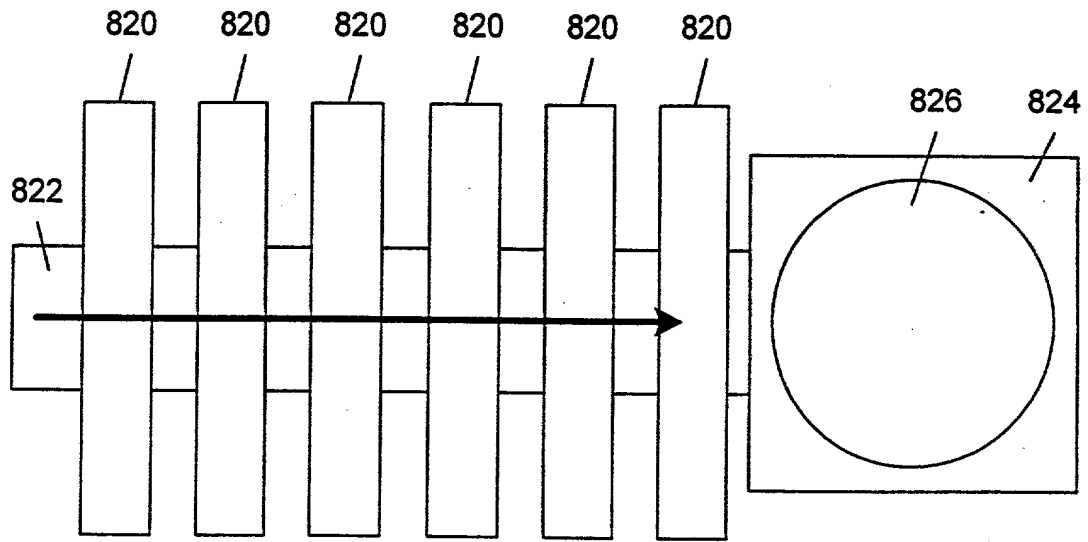
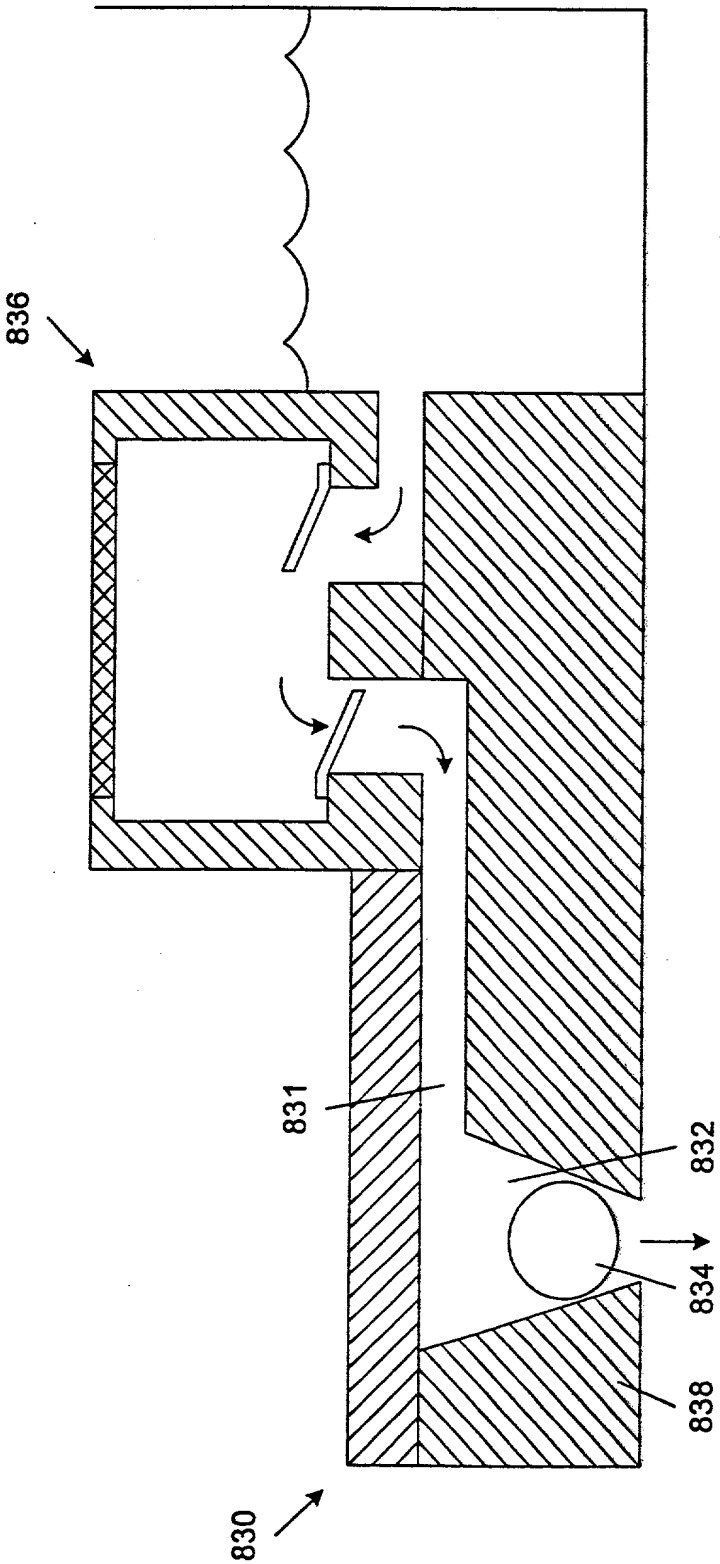


FIG. 32

FIG. 32

FIG. 33





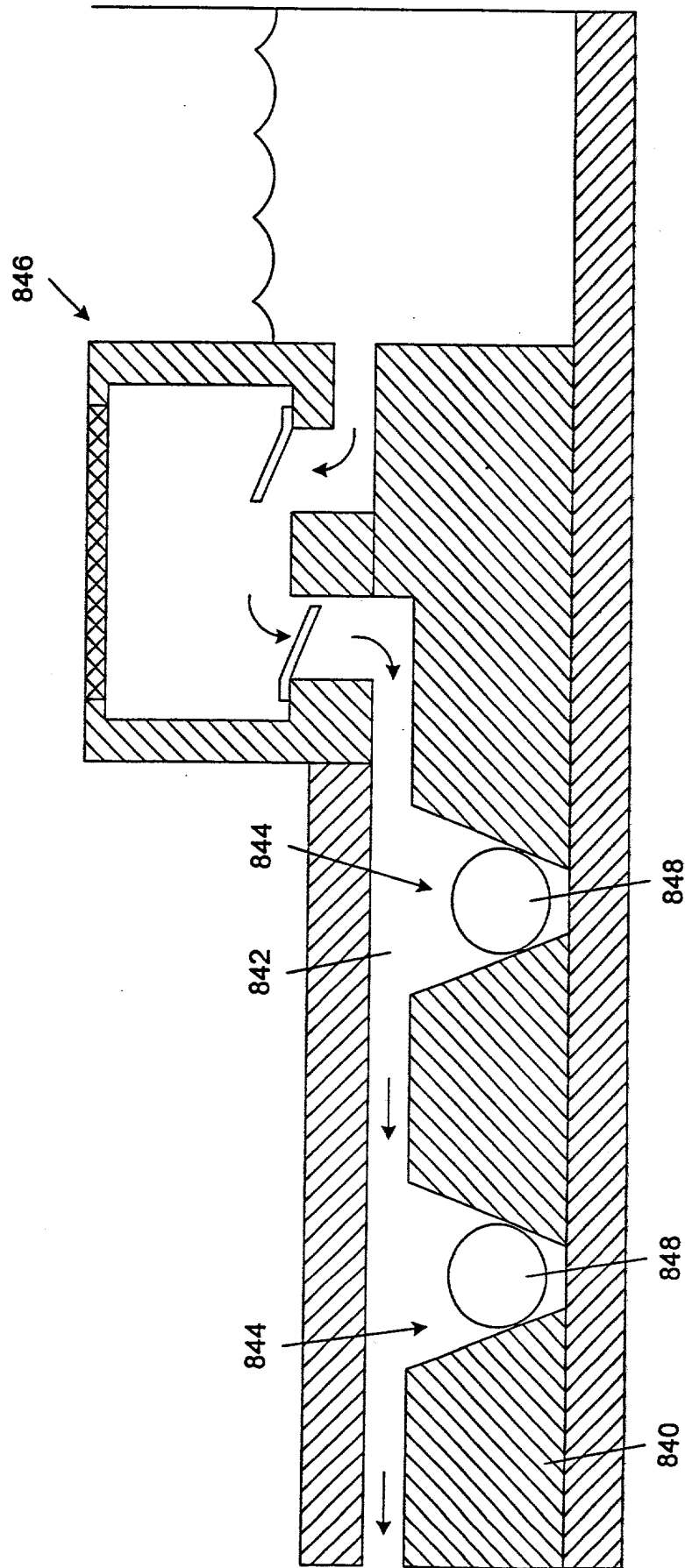


FIG. 34

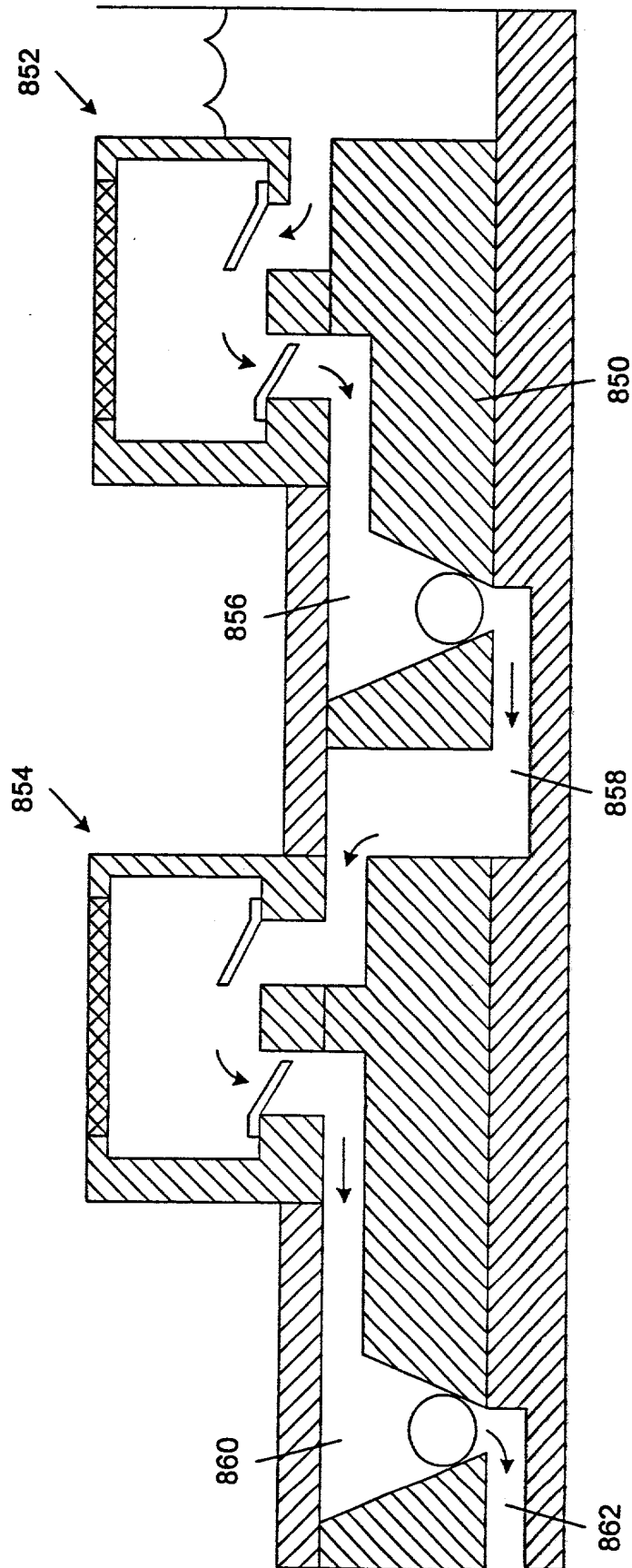


FIG. 35

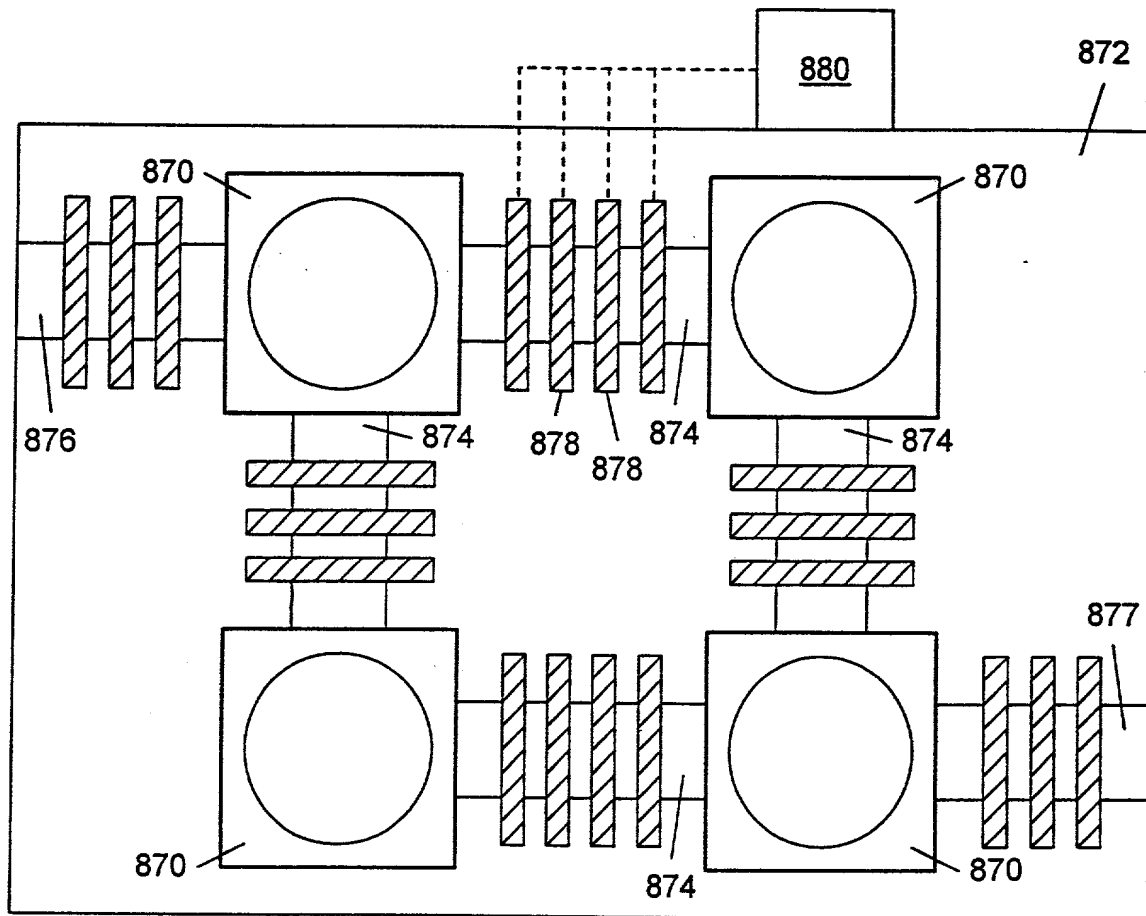


FIG. 36

TOP OF SHEET

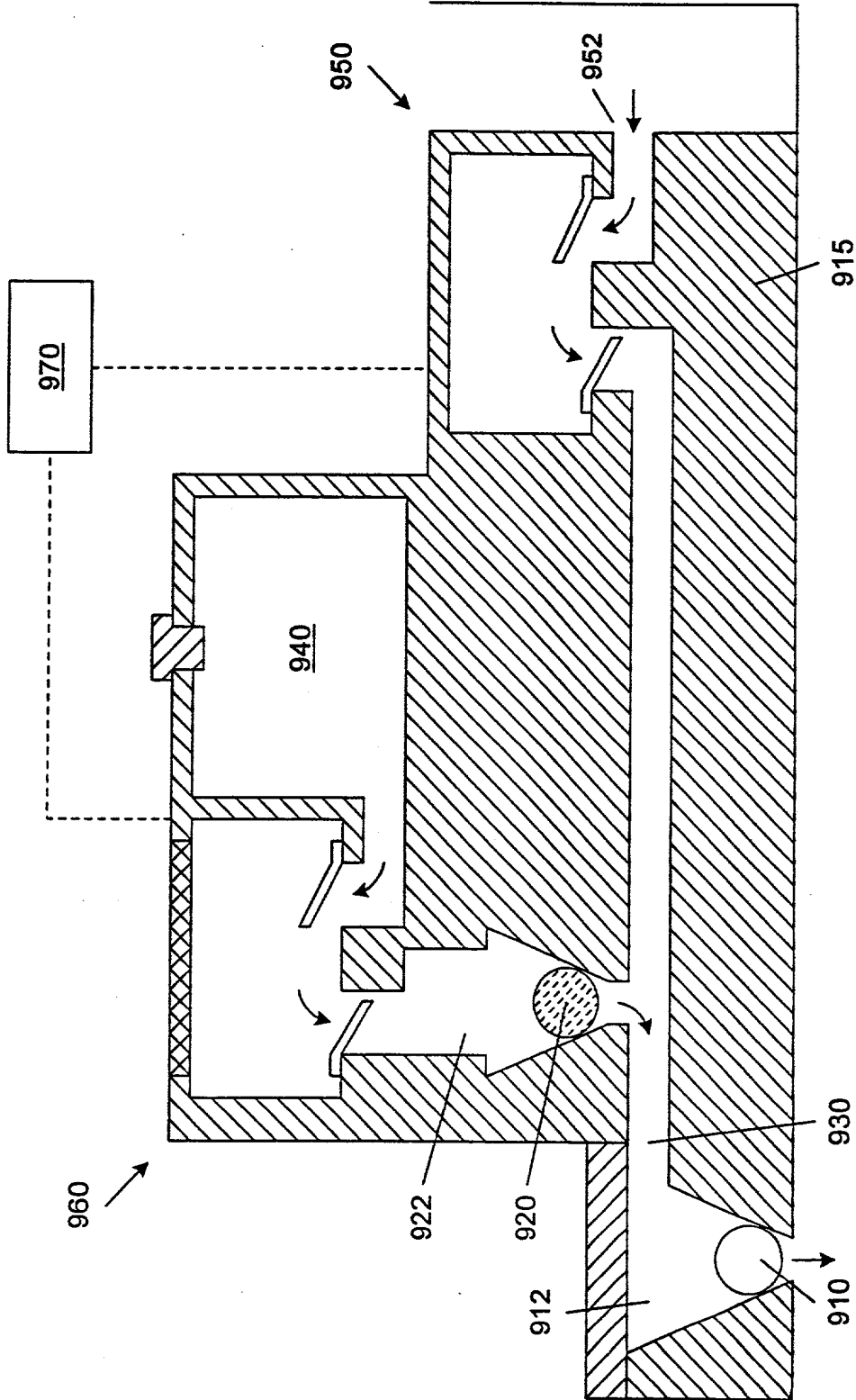


FIG. 37

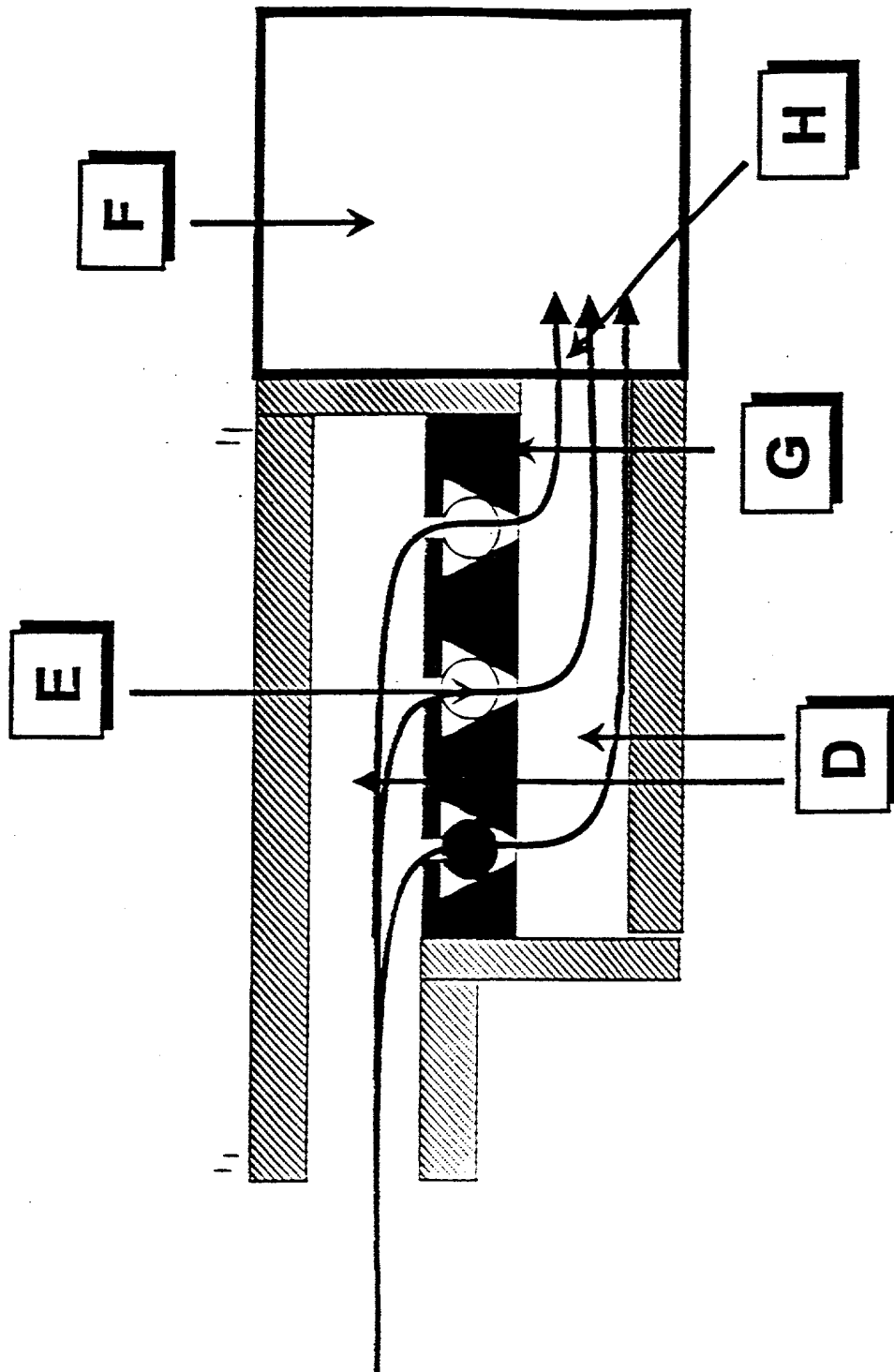


Figure 38

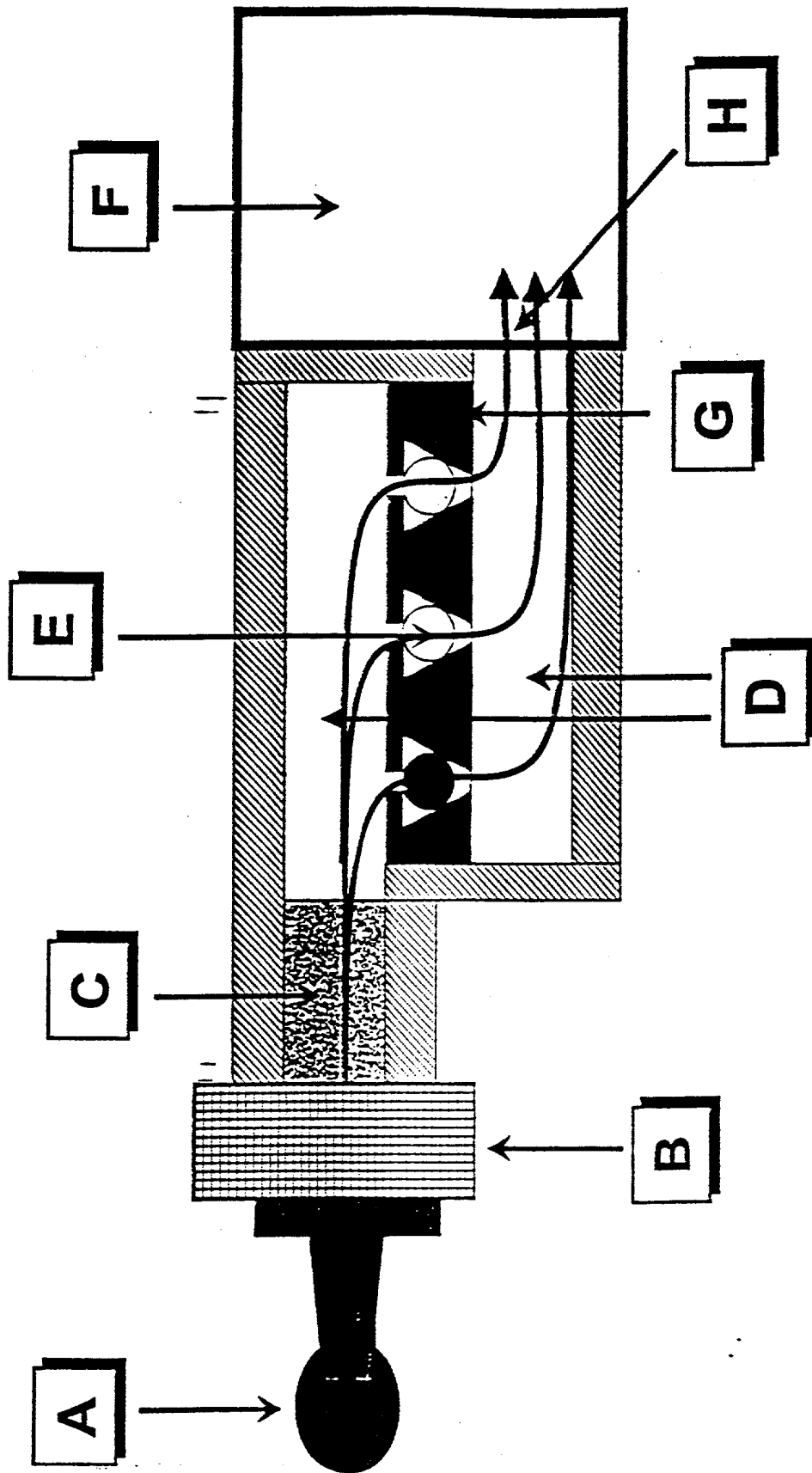


Figure 39

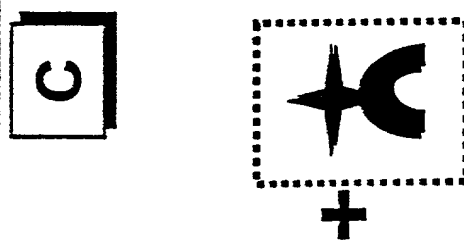
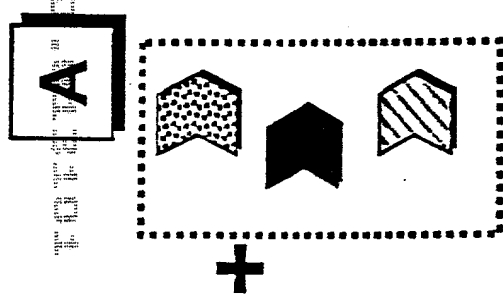
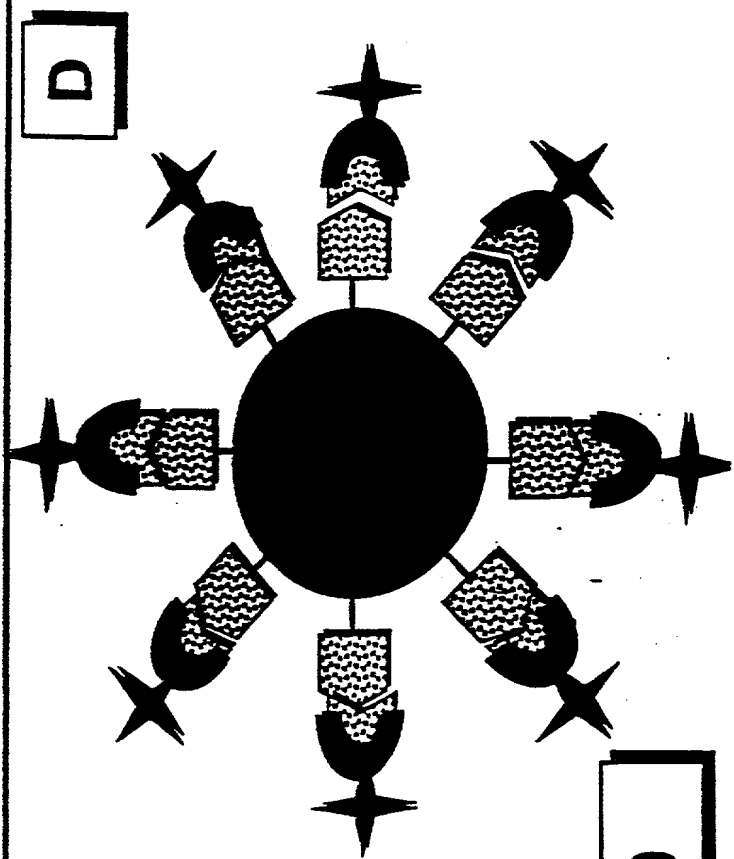
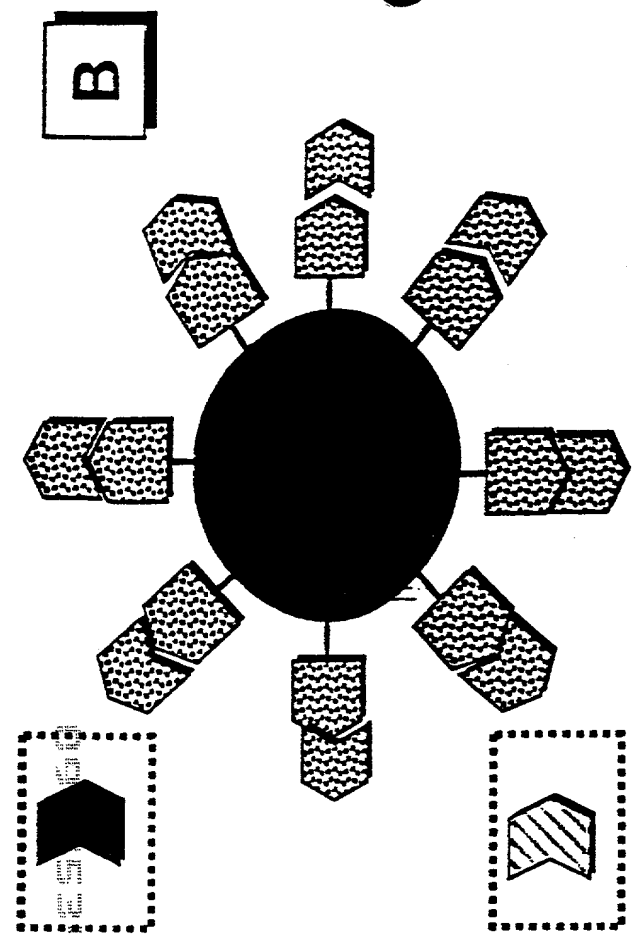


FIG. 40

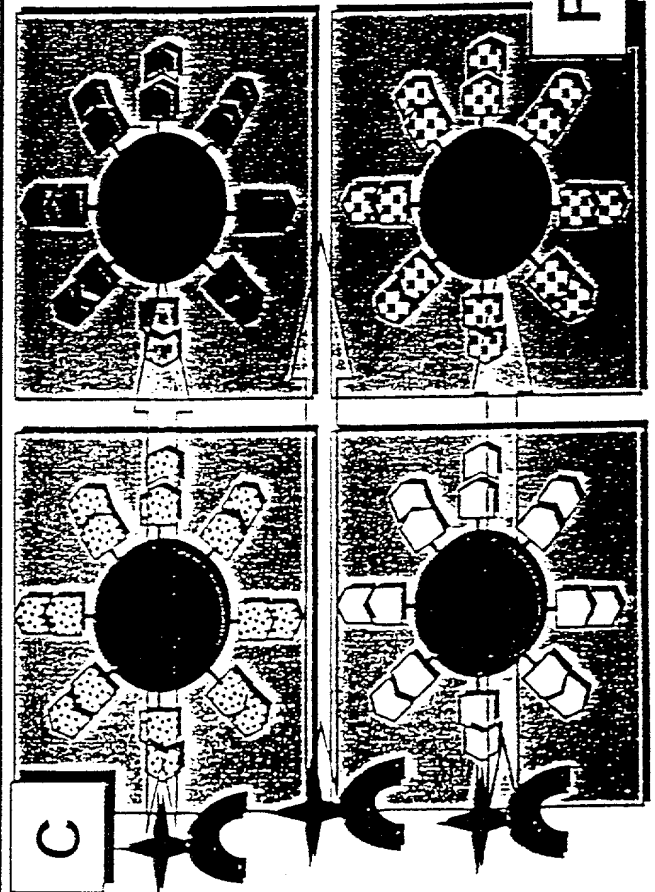
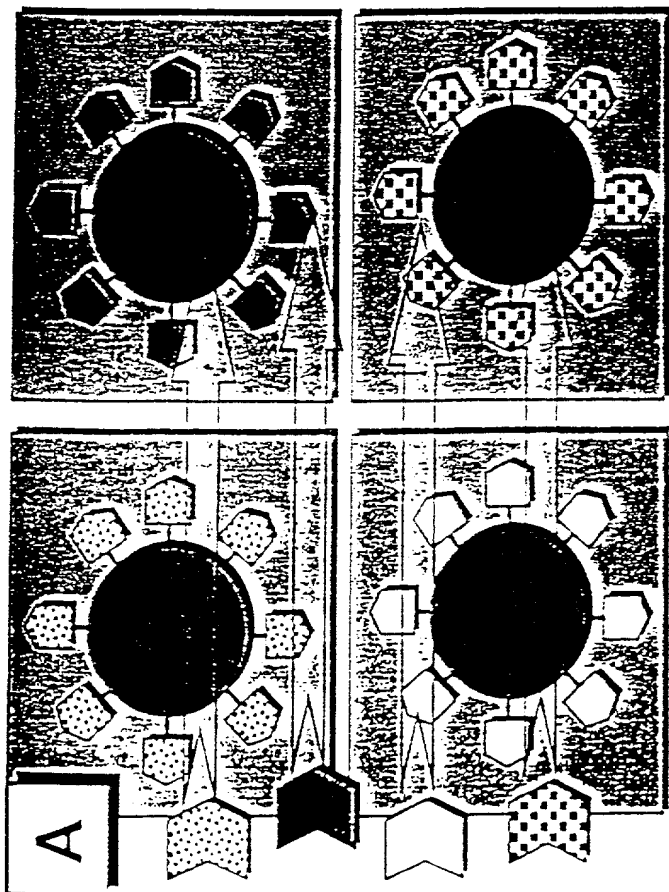
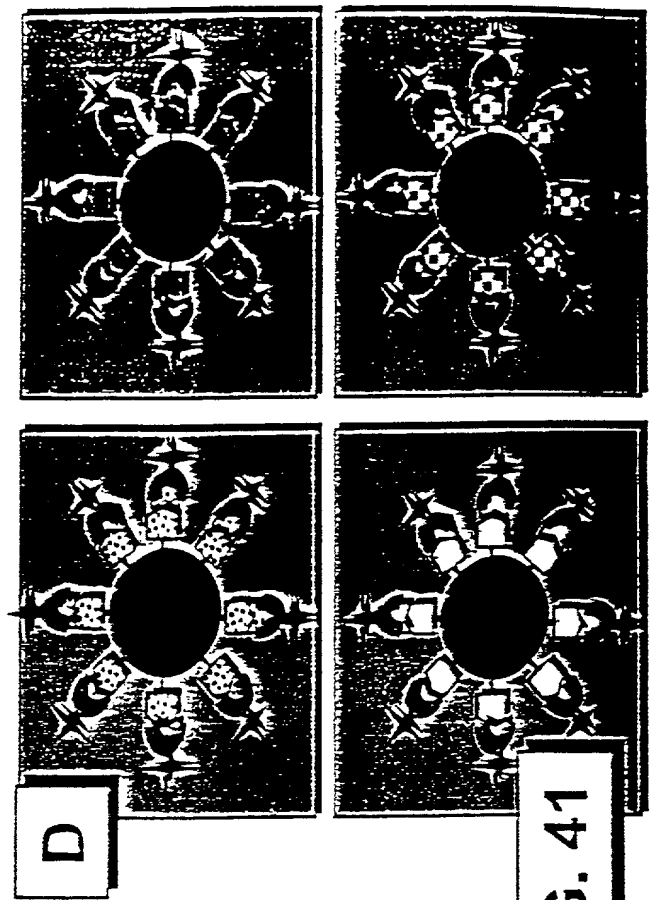
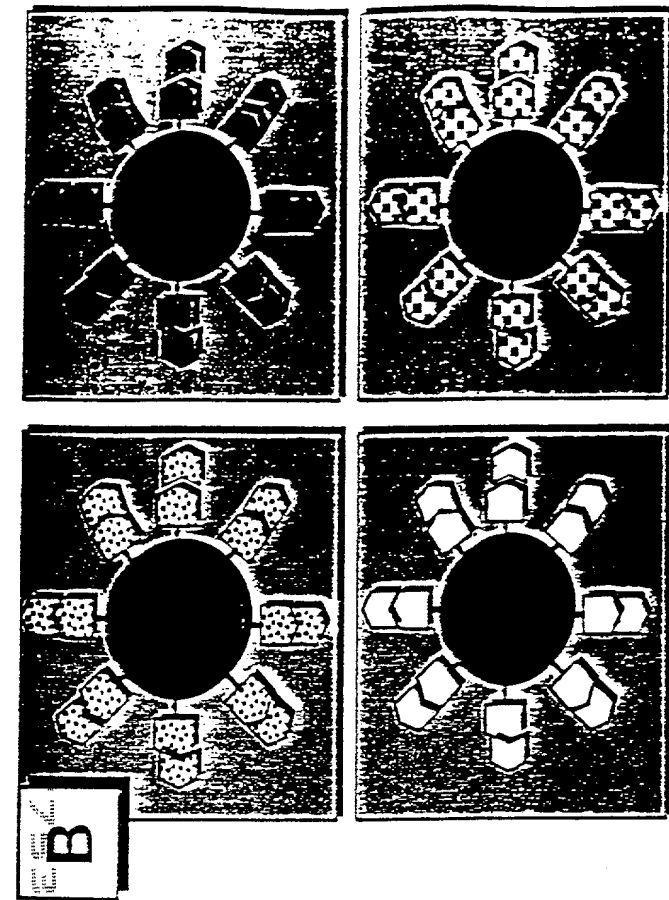


FIG. 41



# Electronic Tongue Biological Sample Acquisition

## Prototype 6/2/99

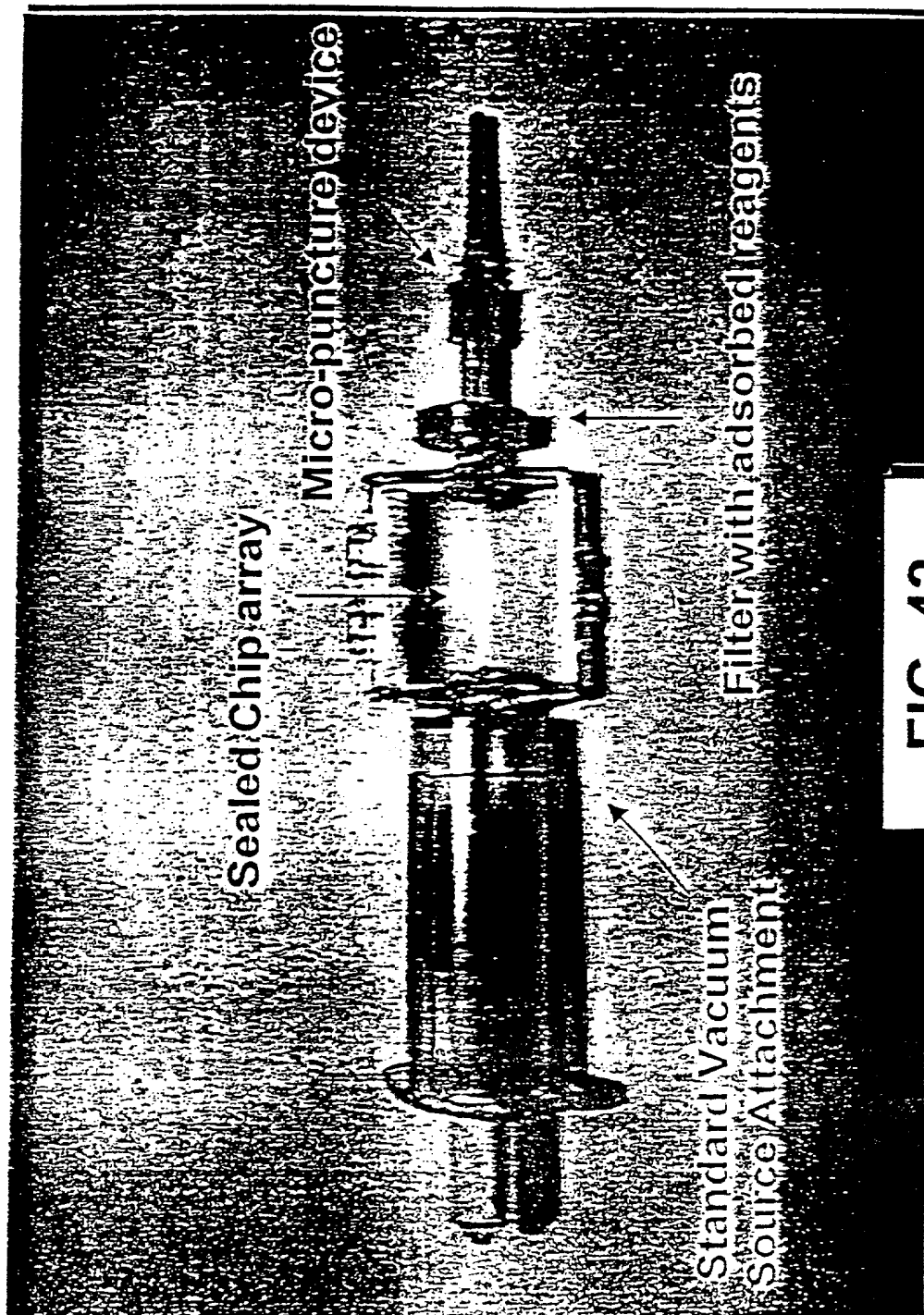
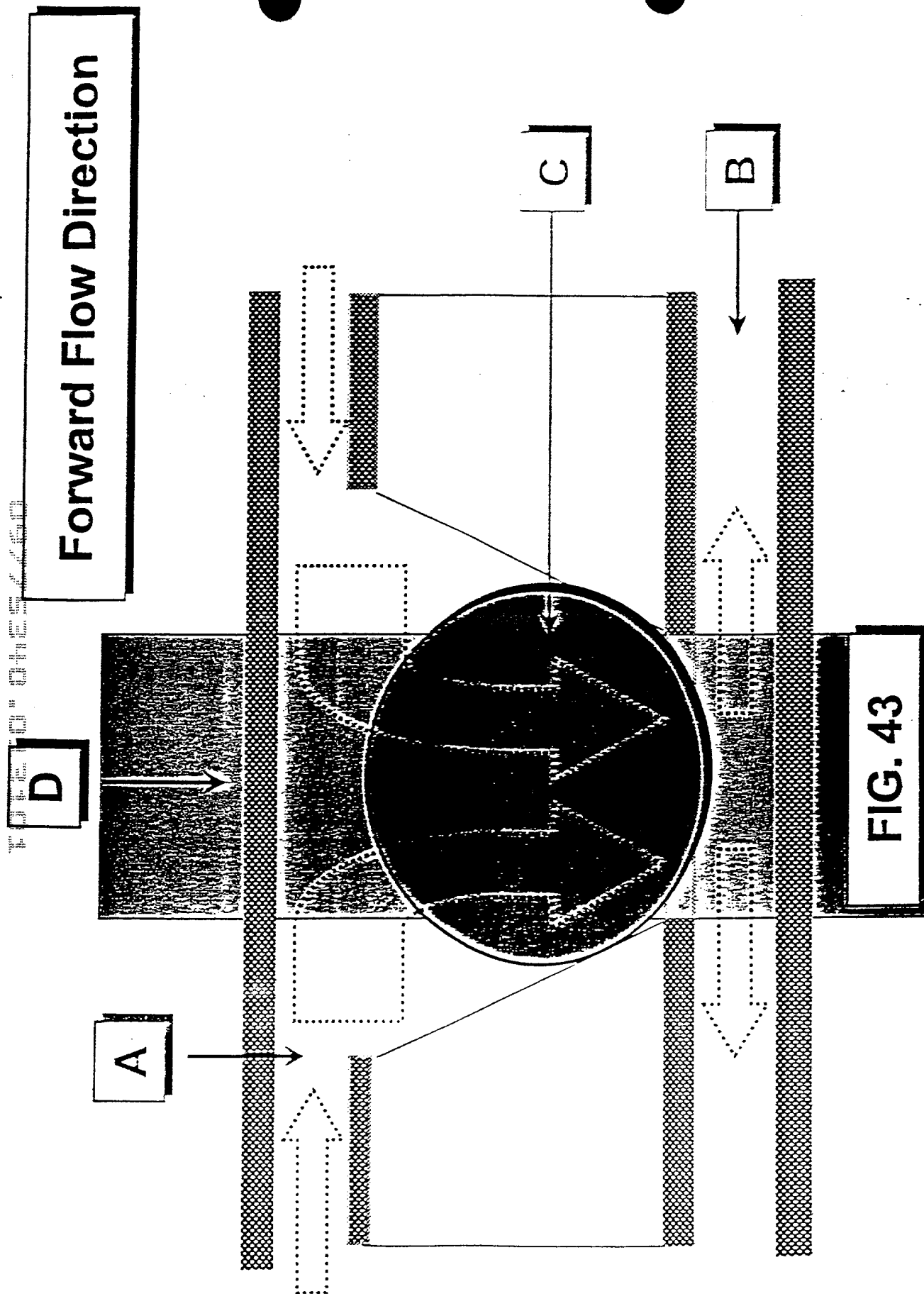
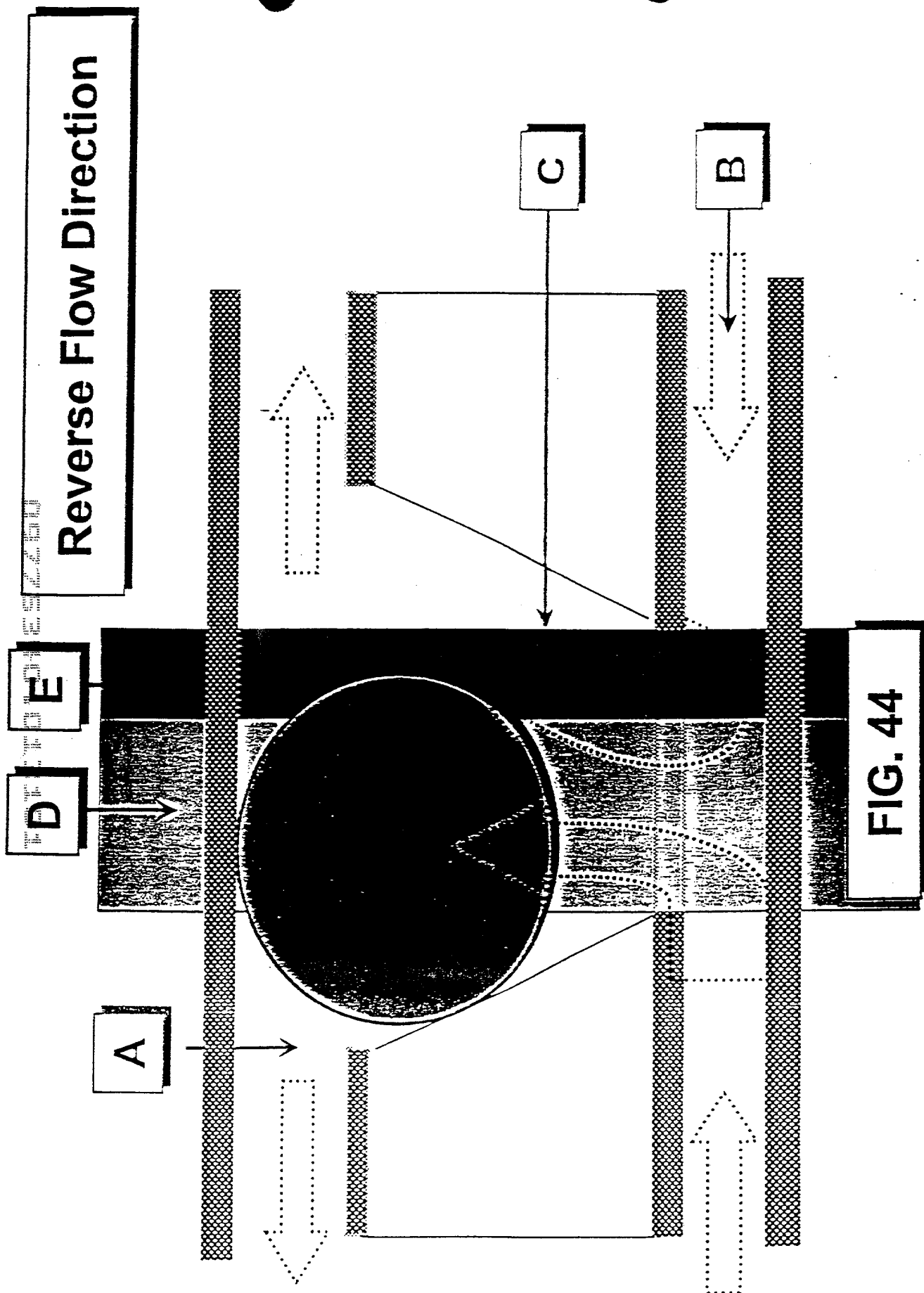


FIG. 42





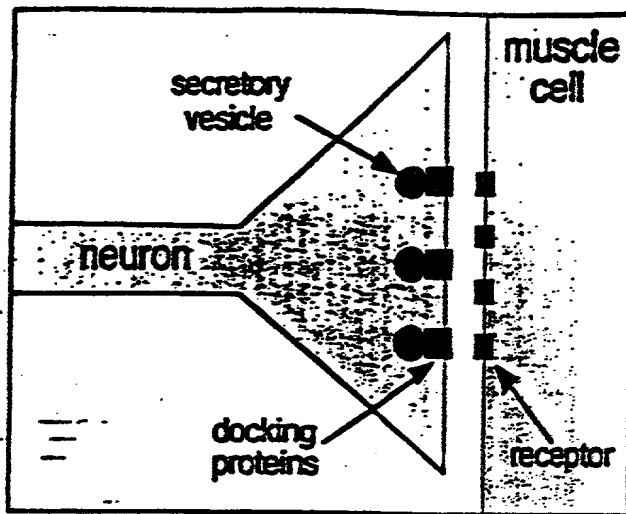


Fig. 45-A

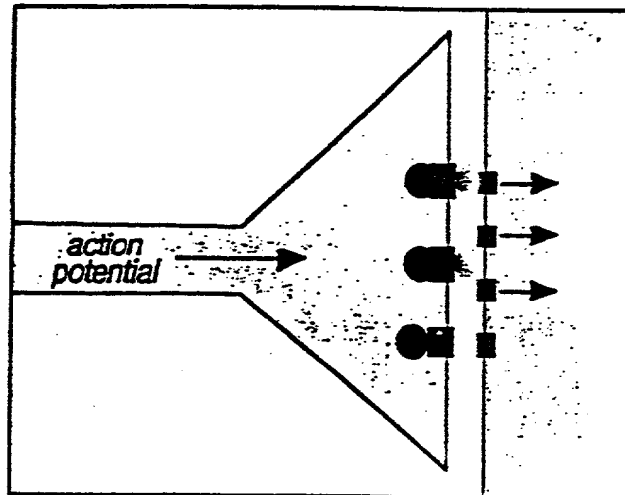


Fig. 45-B

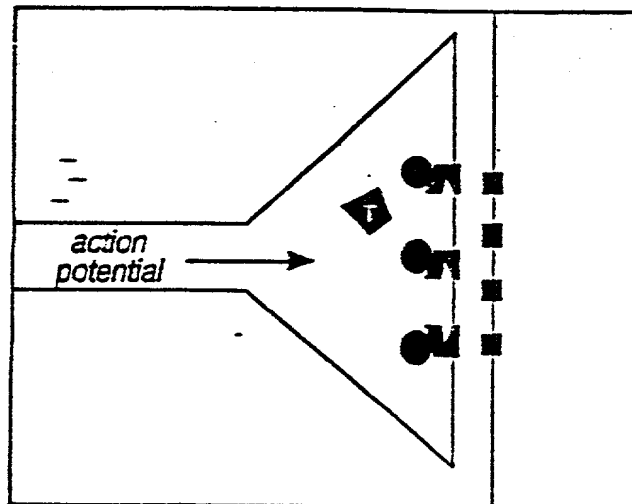


Fig. 45-C

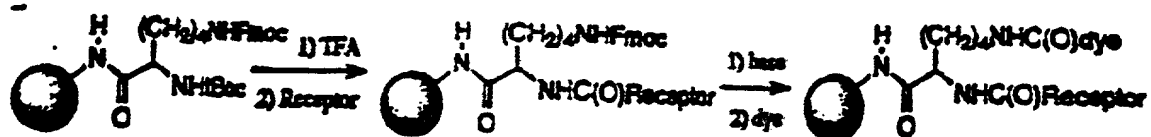


FIG. 45 D

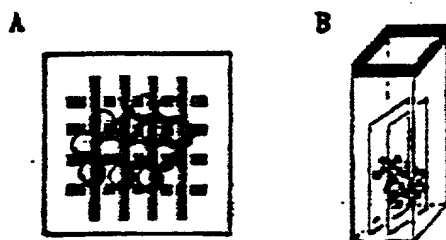


FIG. 46

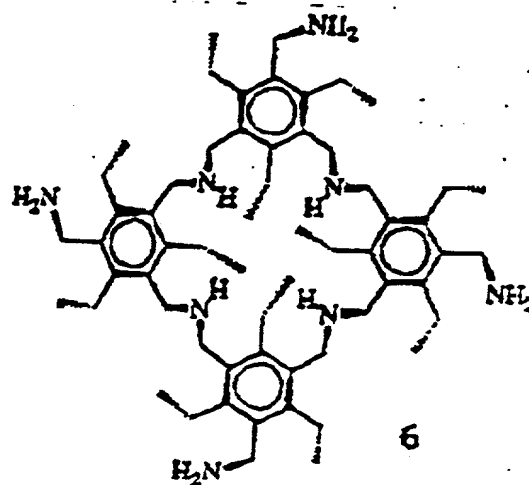
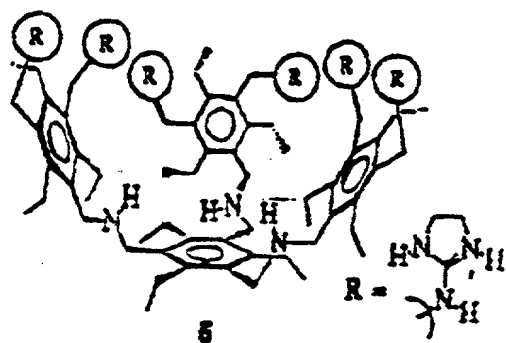
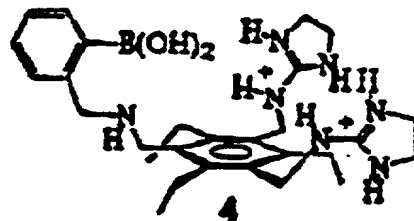
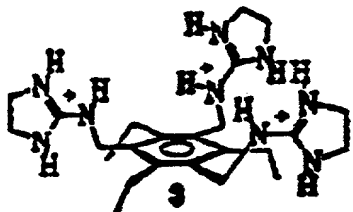


FIG. 47

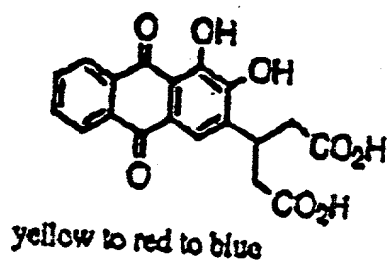
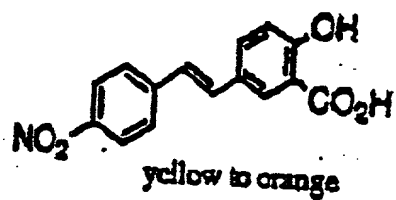
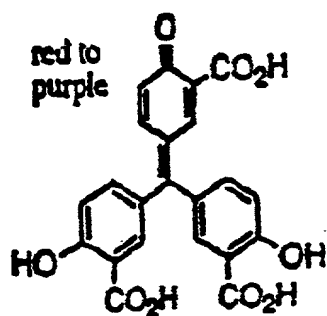
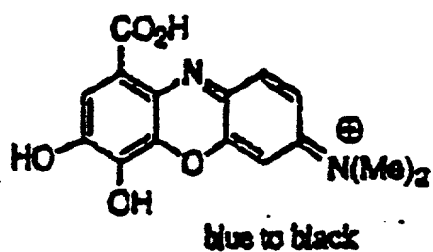
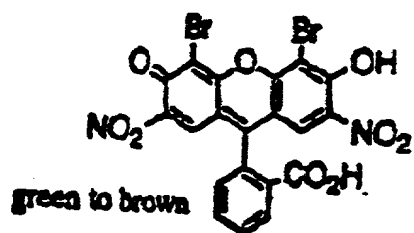


FIG. 48

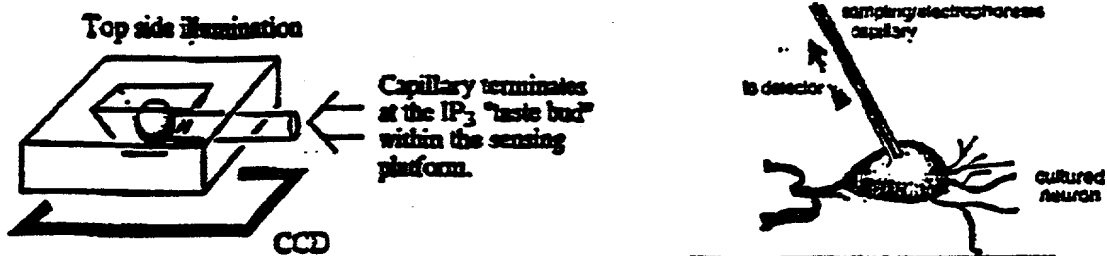


FIG. 49

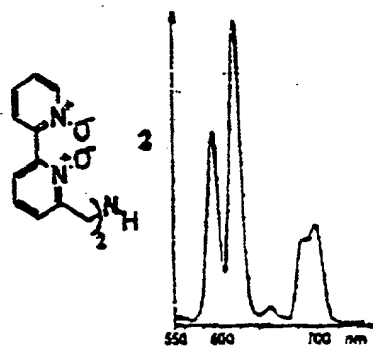
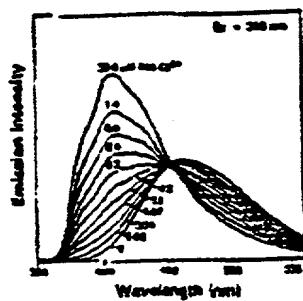
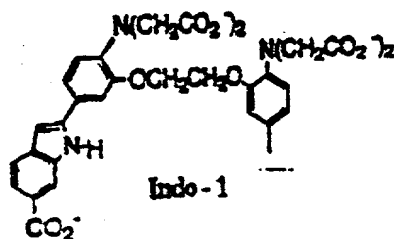


FIG. 50



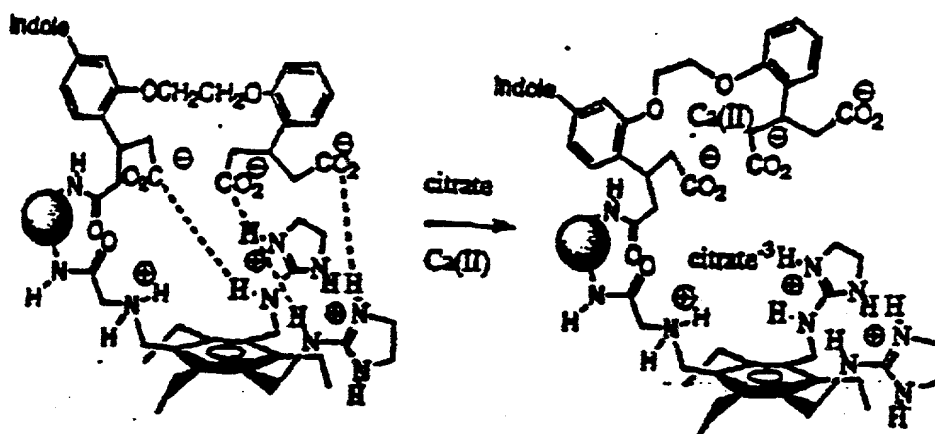


FIG. 51

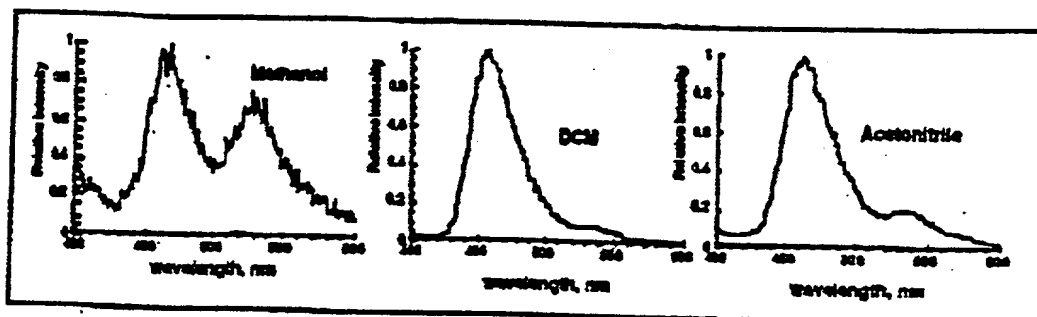


FIG. 52

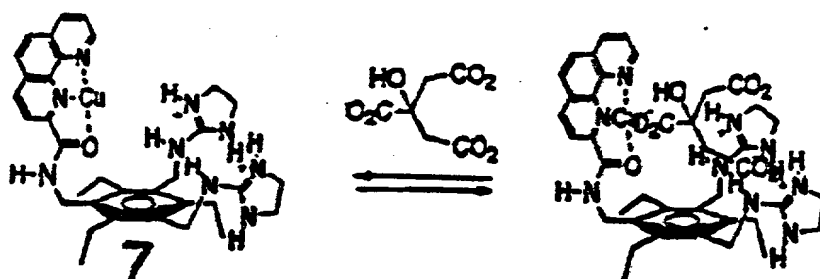


FIG. 53

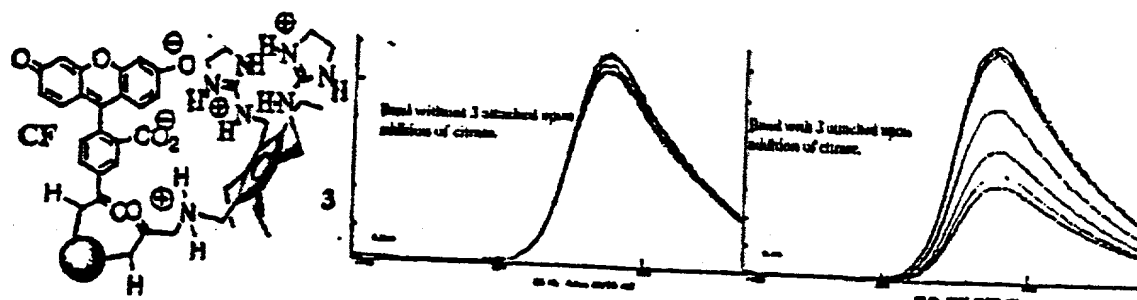


FIG. 54

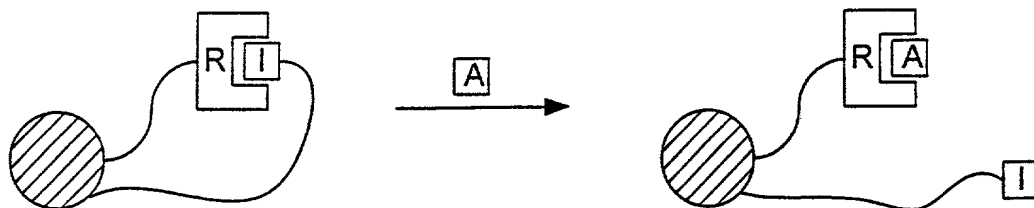


FIG. 55A

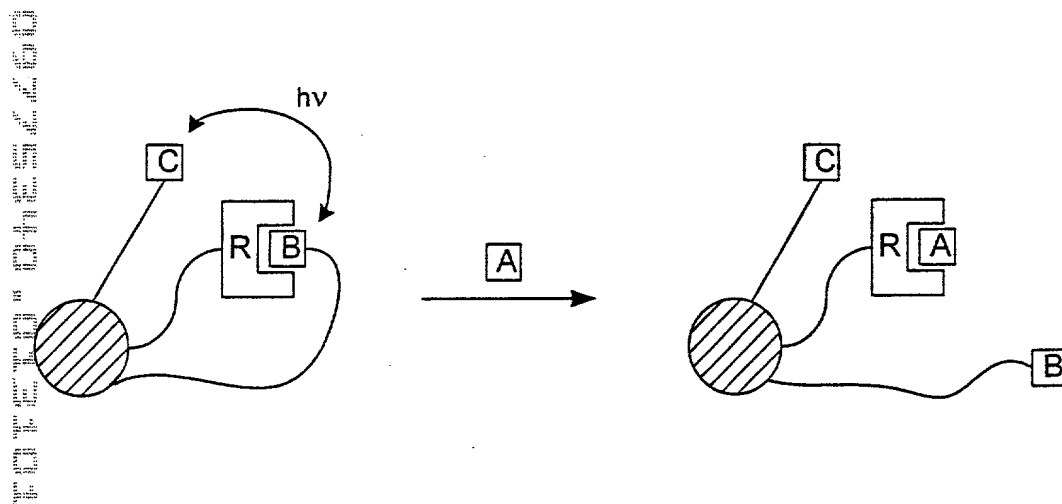


FIG. 55B

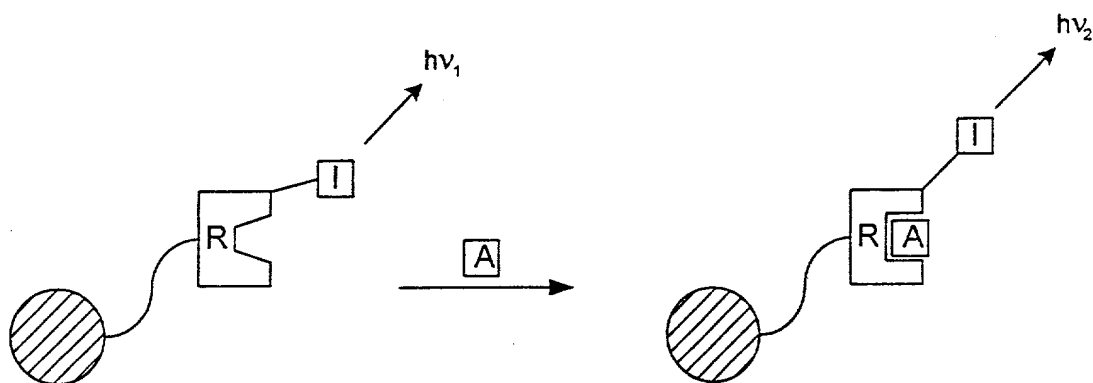


FIG. 55C

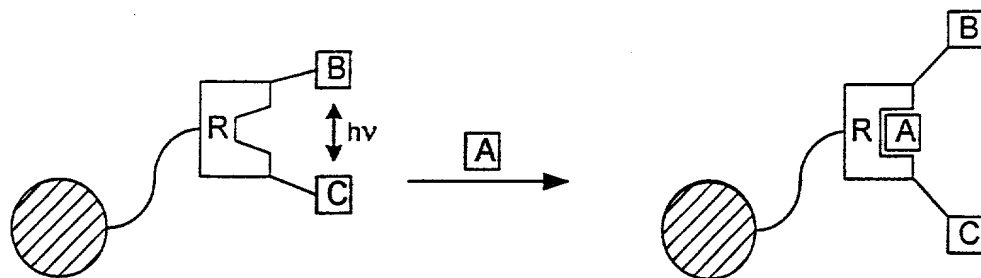


FIG. 55D

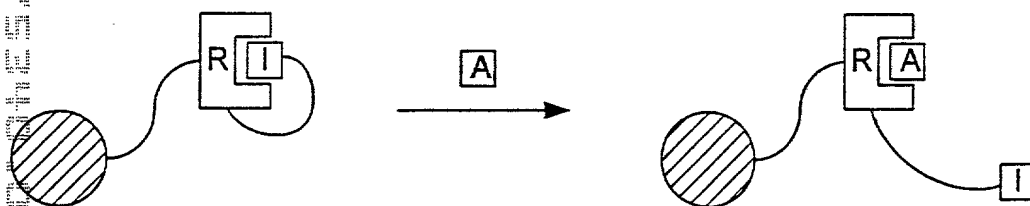


FIG. 55E

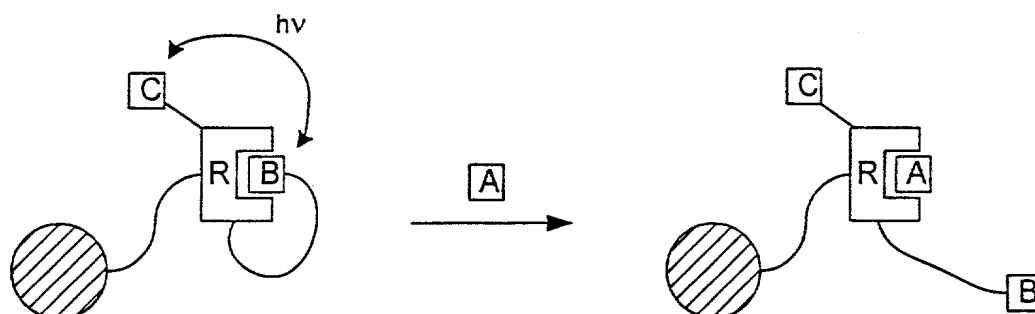


FIG. 55F

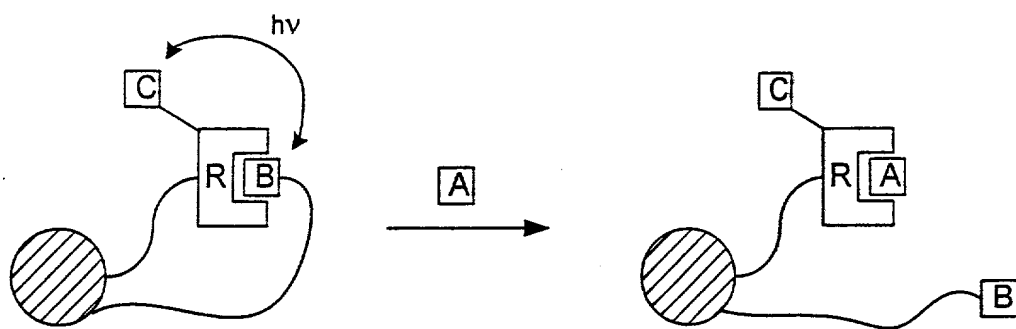


FIG. 55G

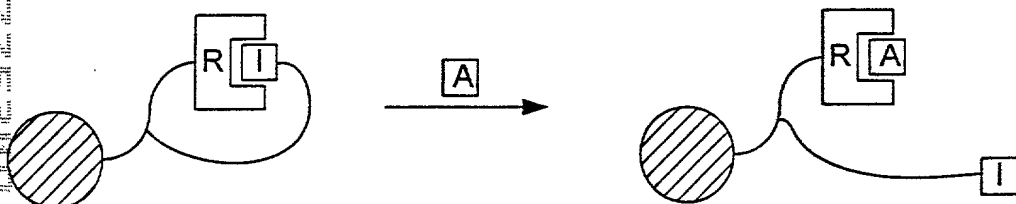


FIG. 55H

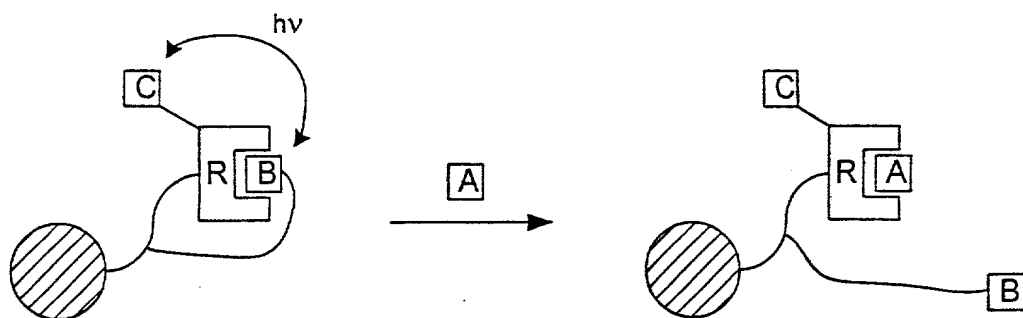


FIG. 55I

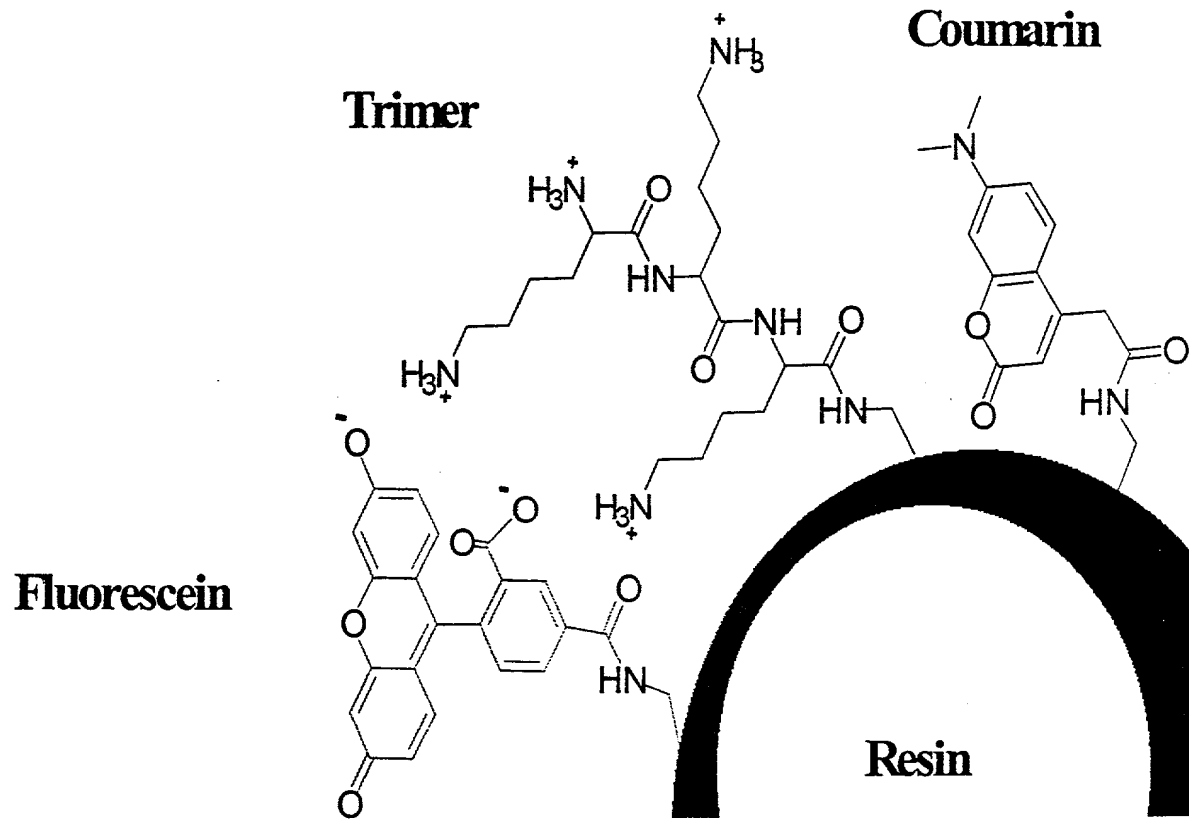


FIG. 56

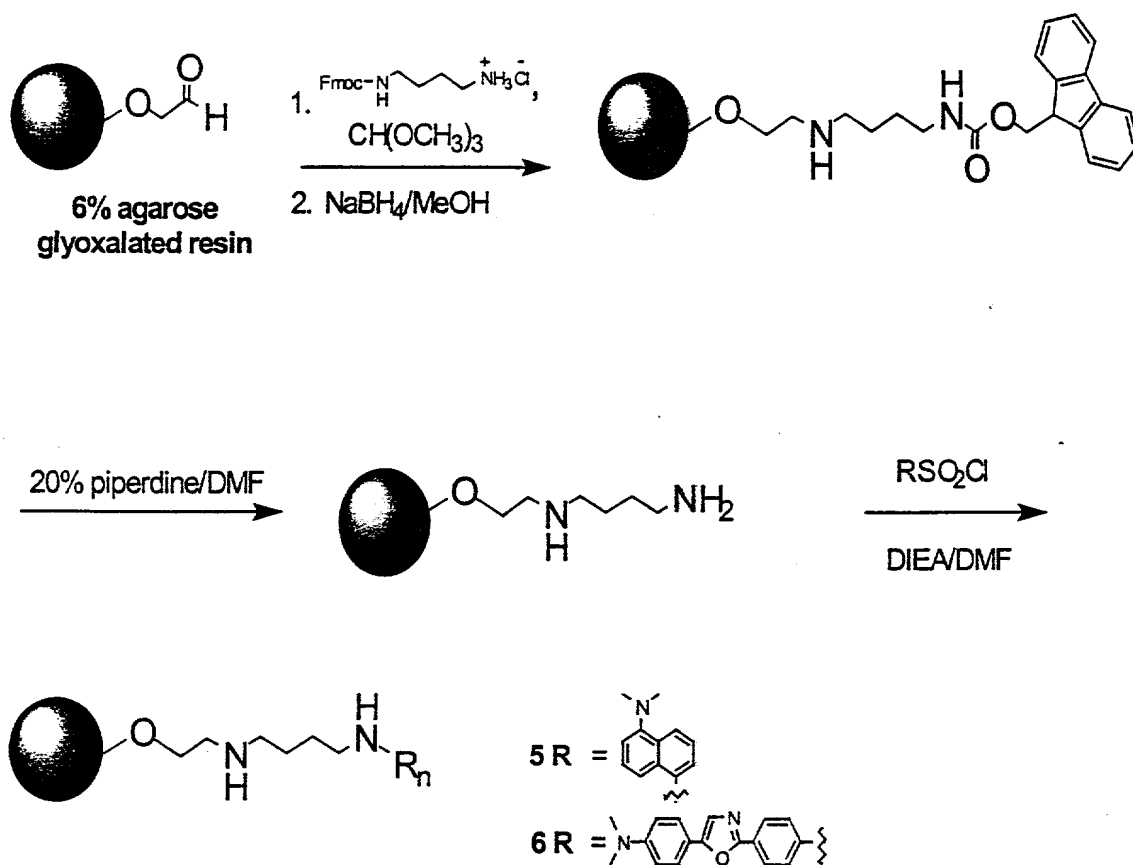


FIG. 57

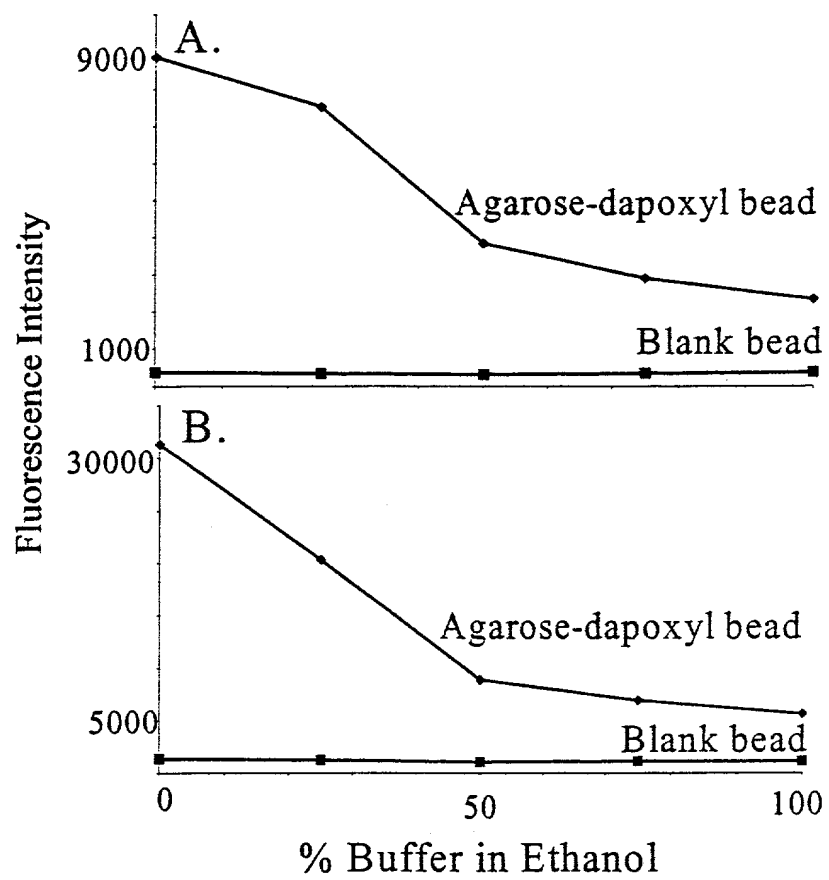


FIG. 58



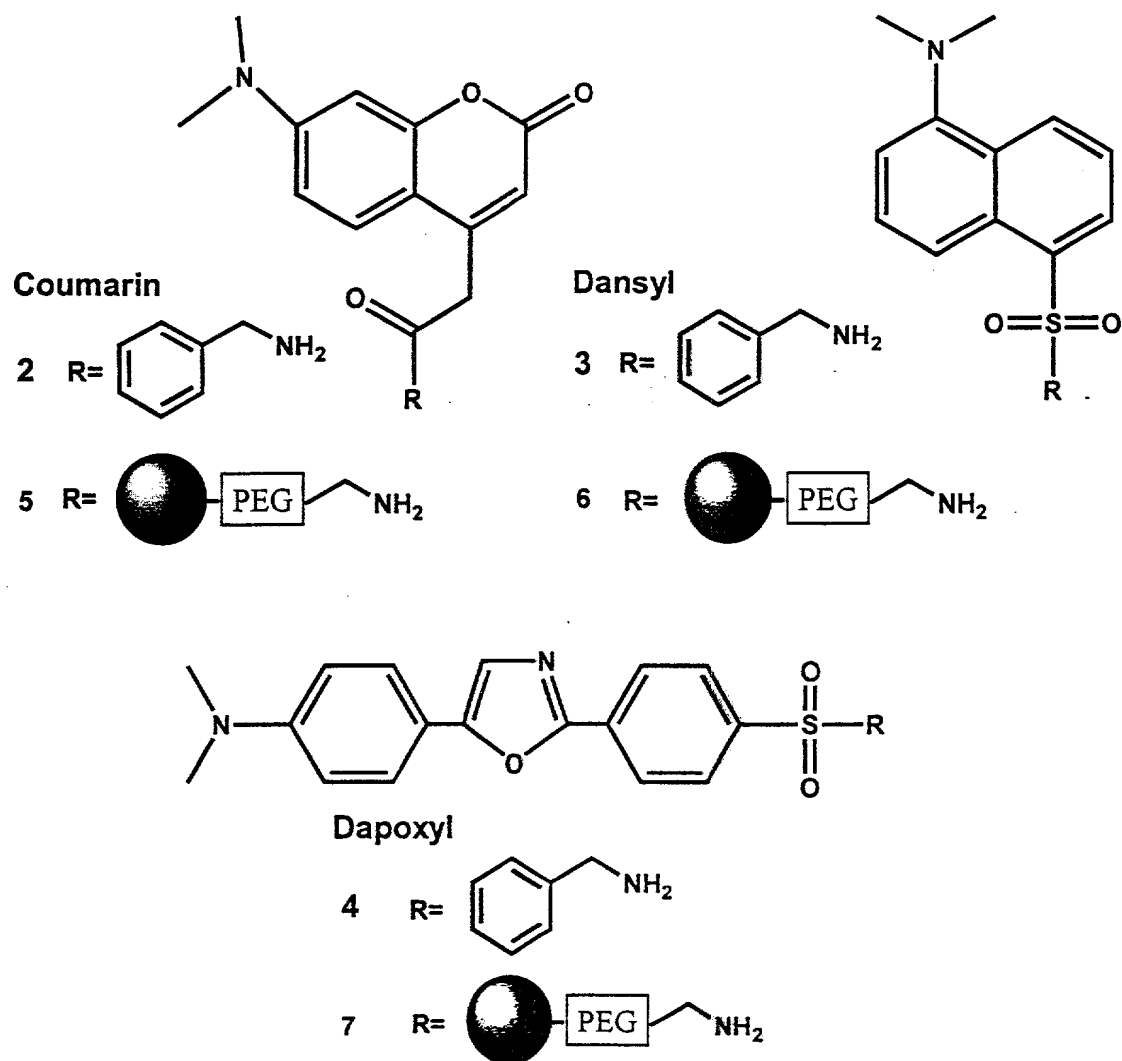


FIG. 59

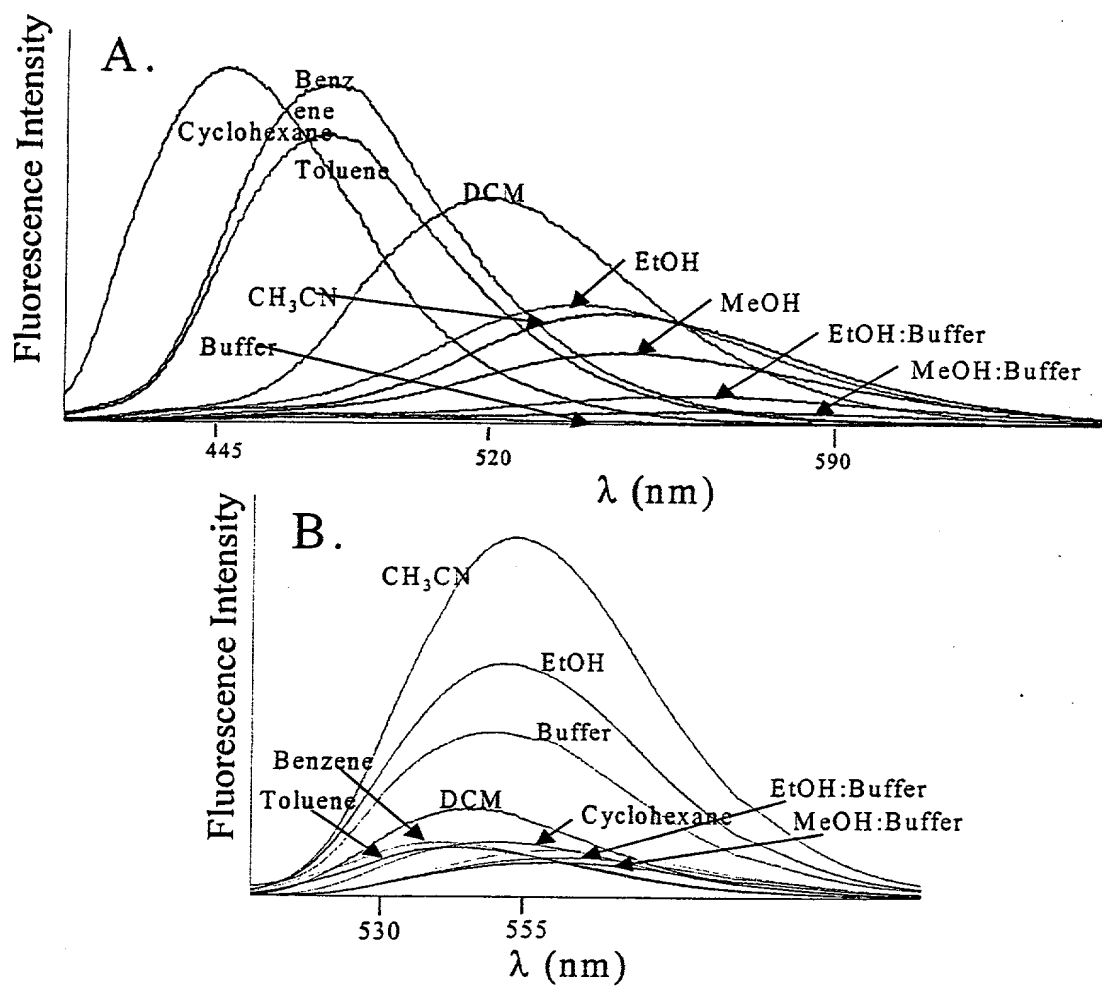
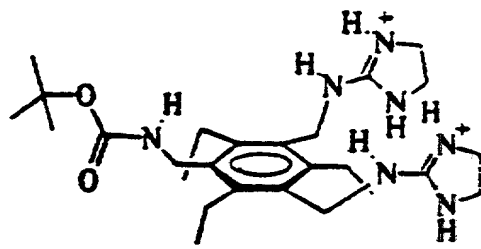


FIG. 60



1

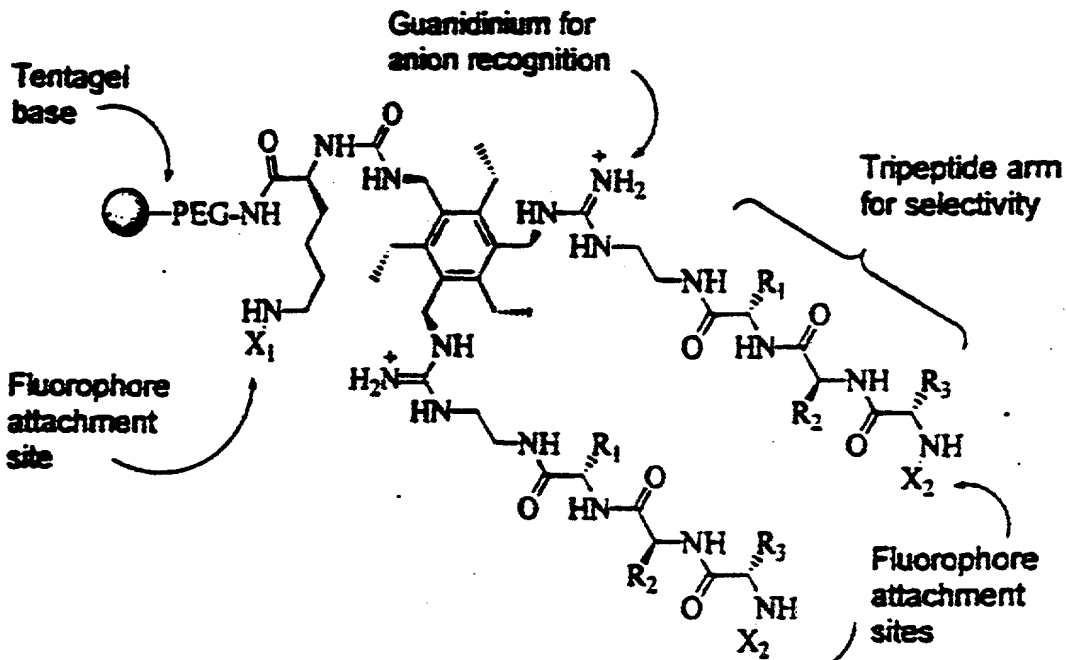
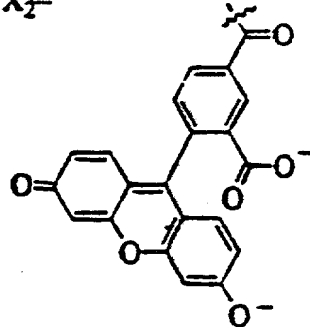
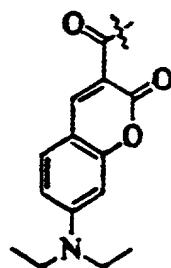
2:  $X_1 = X_2 = H$ 3:  $X_1 =$  $X_2 =$ 

FIG. 61

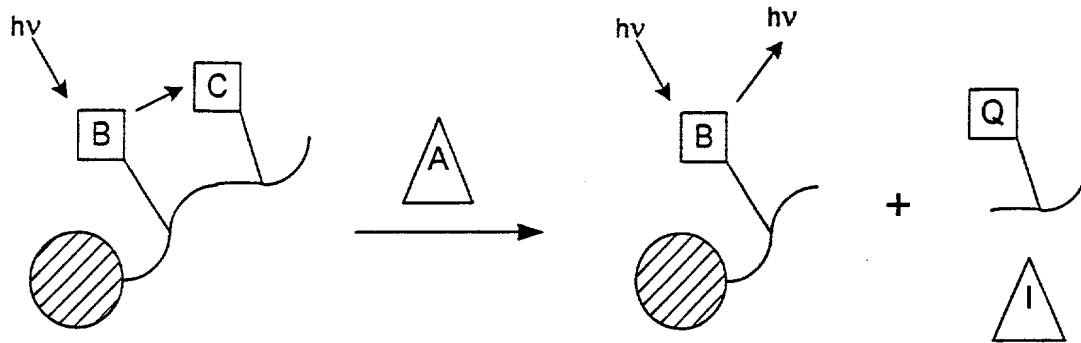


FIG. 62A

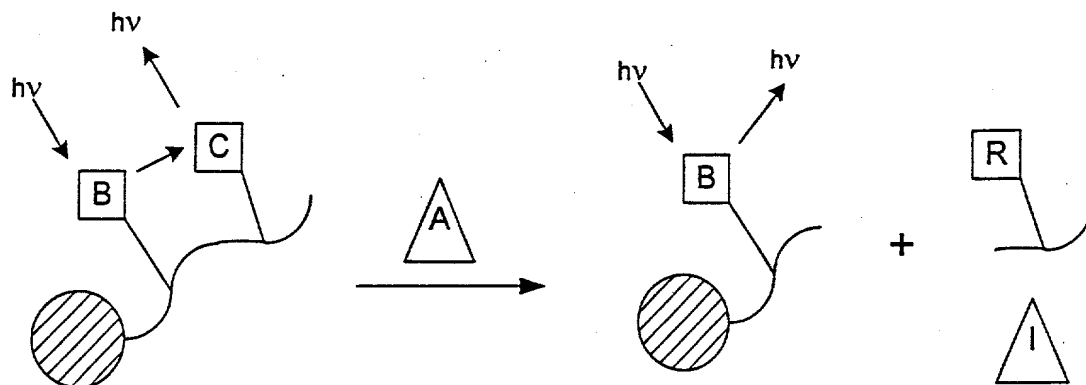


FIG. 62B

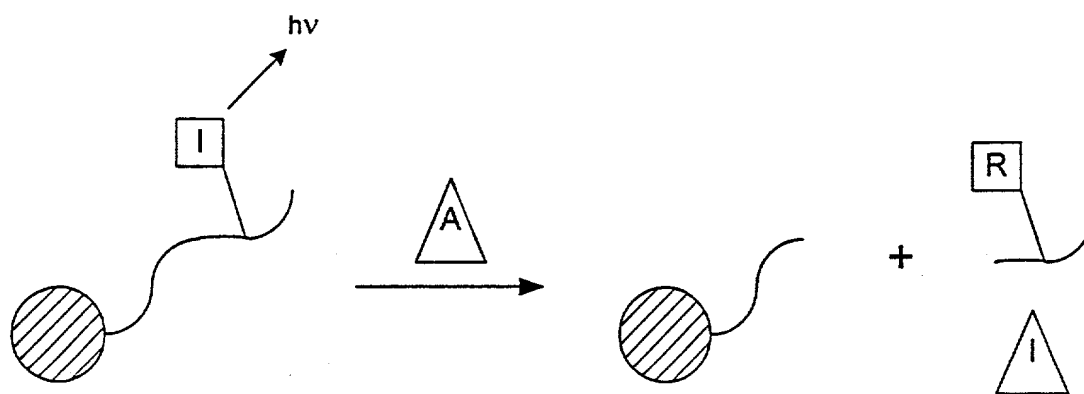


FIG. 62C

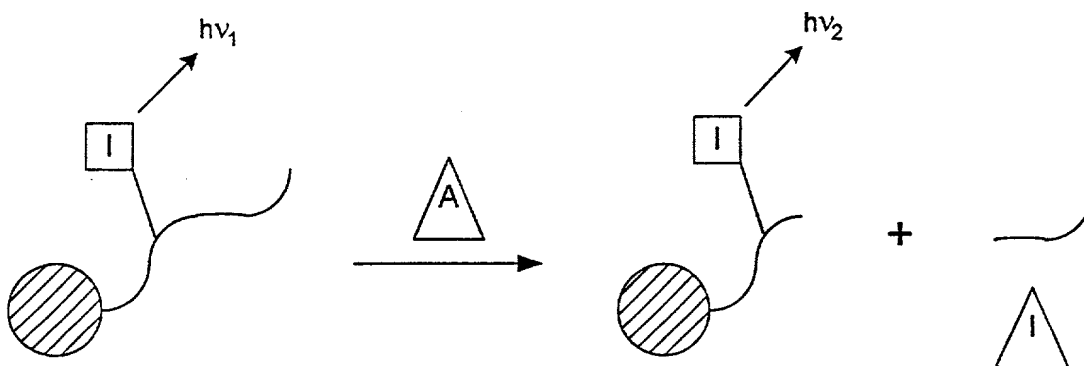


FIG. 62D

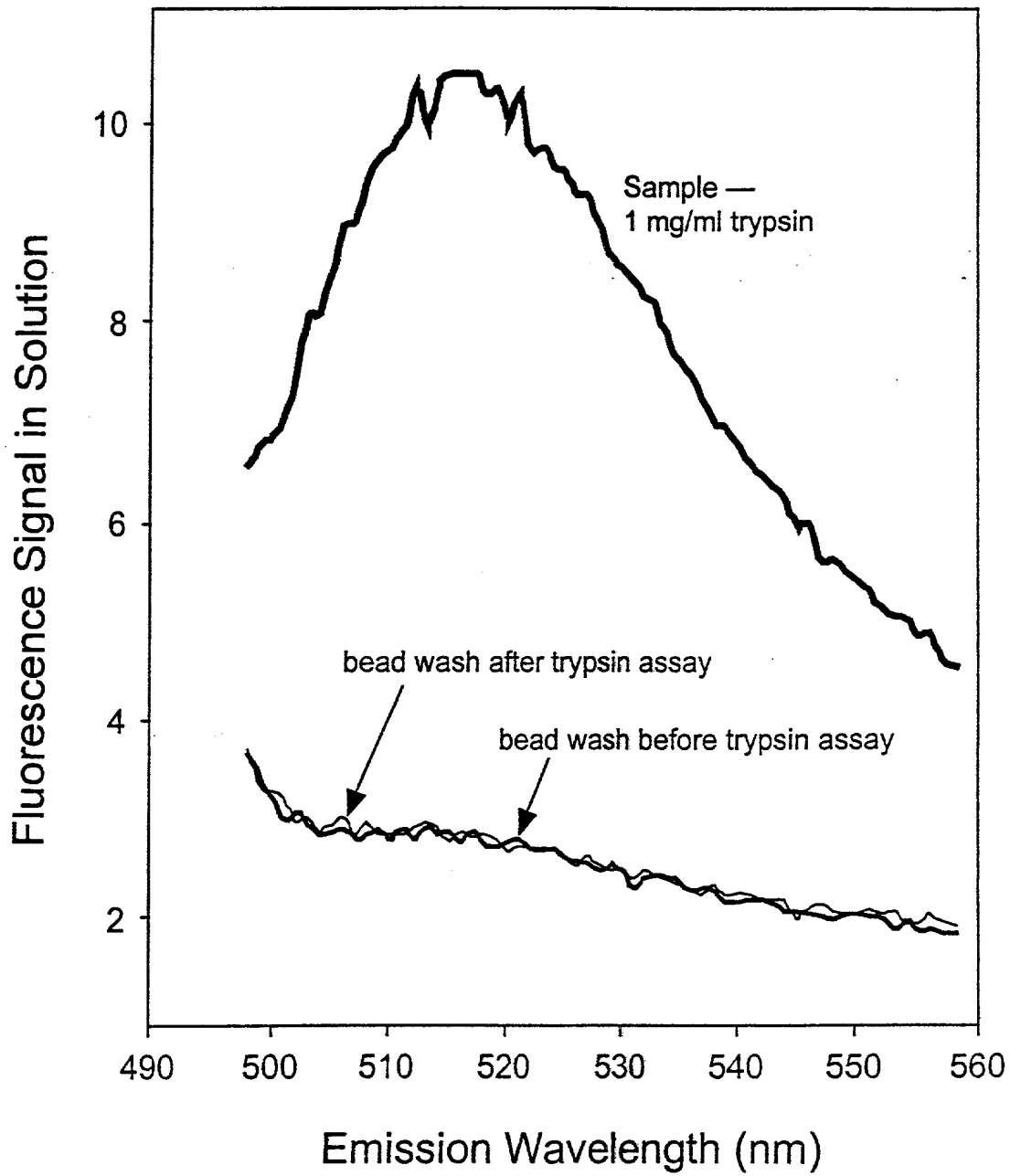


FIG. 63

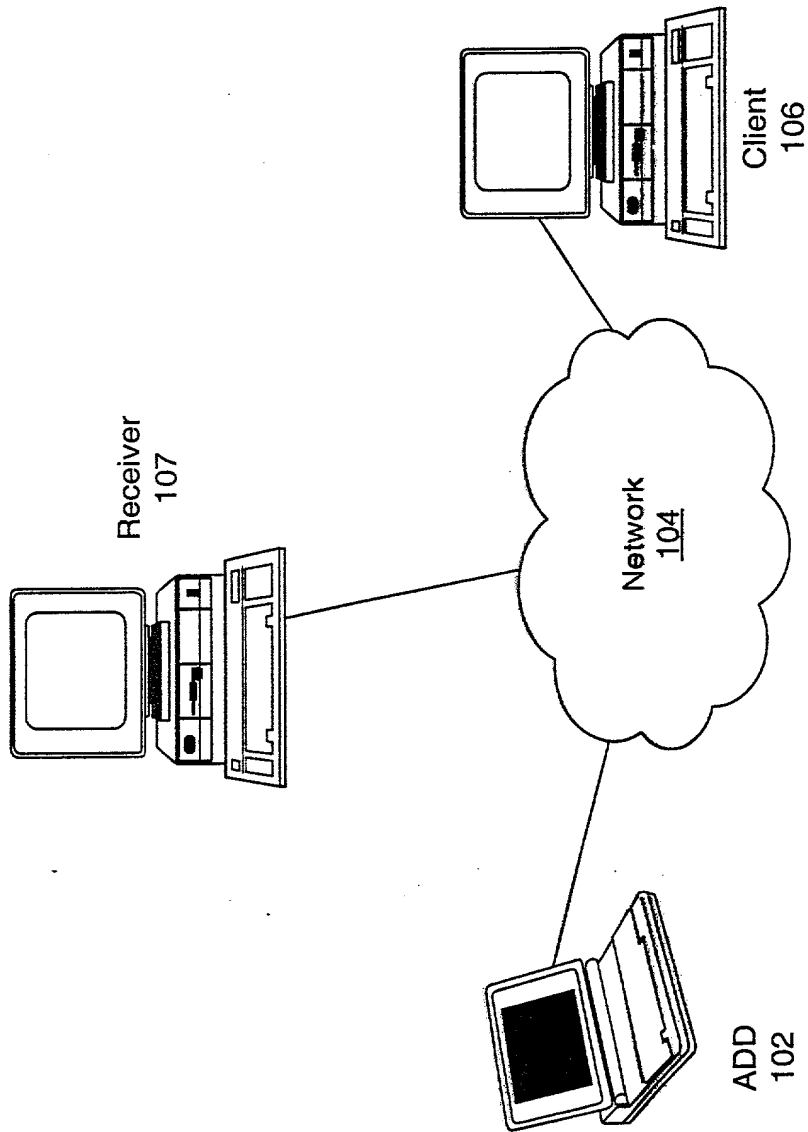


FIG. 64

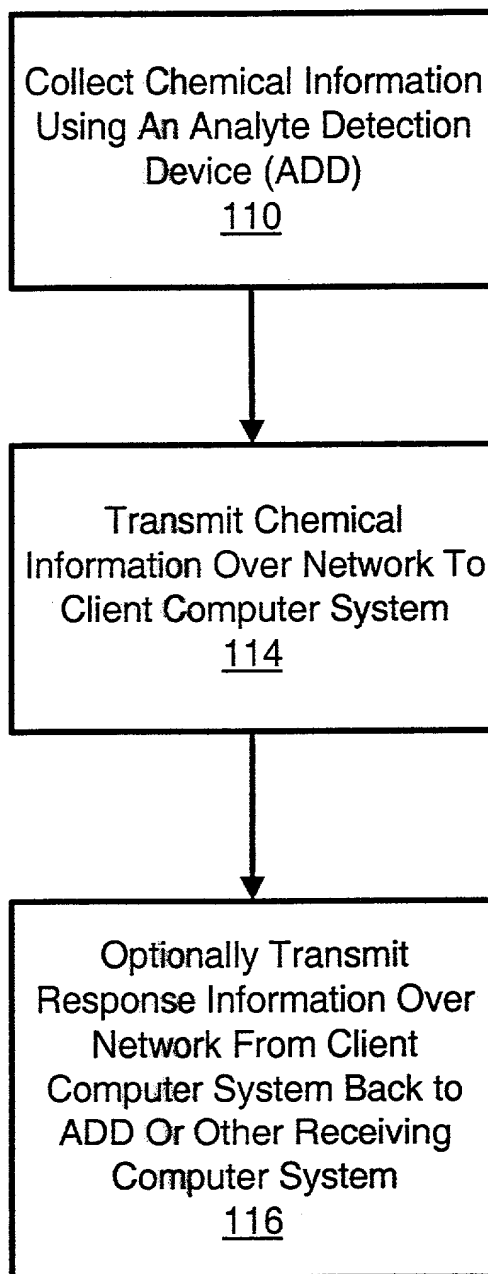


FIG. 65

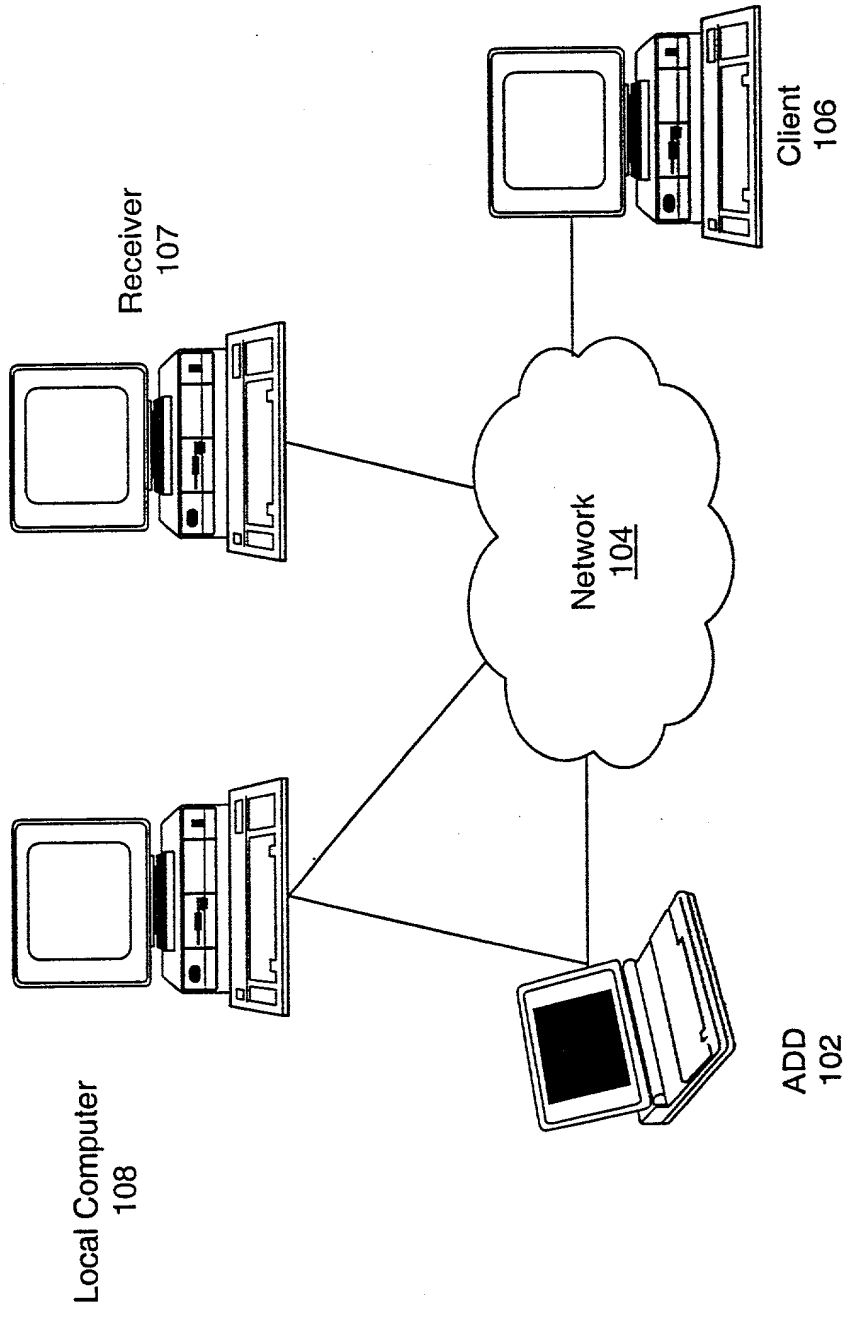


FIG. ~~55~~ 66



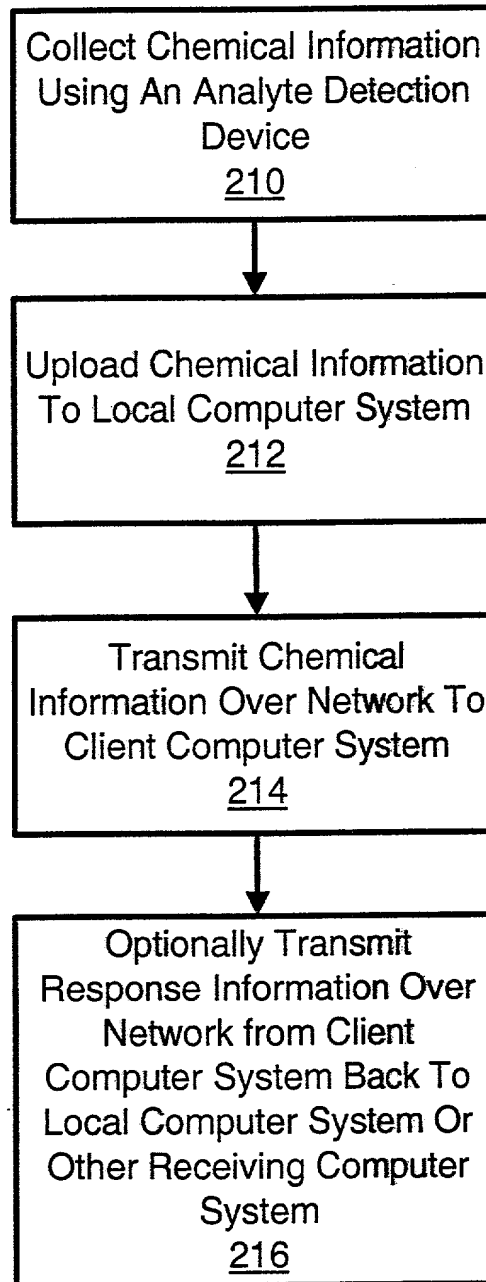


FIG. ~~66~~ 67

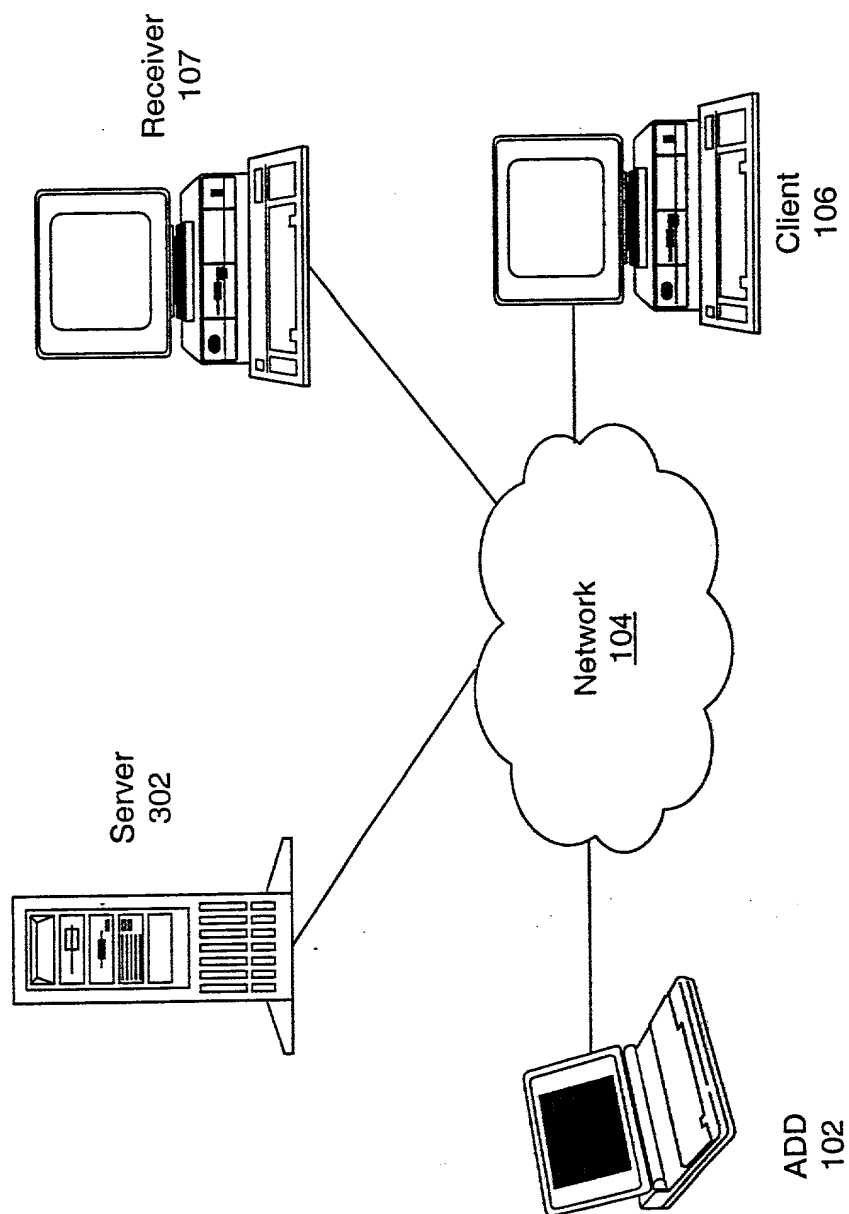


FIG. 68

Collect Chemical Information  
Using An Analyte Detection  
Device  
310



Upload Chemical Information  
To Server  
312



Client Computer System  
Connects to Server Over  
Network  
314



Server Transmits Chemical  
Information to Client  
Computer System  
316



Optionally Transmit  
Response Information Over  
Network From Client  
Computer System Back To  
Server Or Other Receiving  
Computer system  
318

FIG. 69

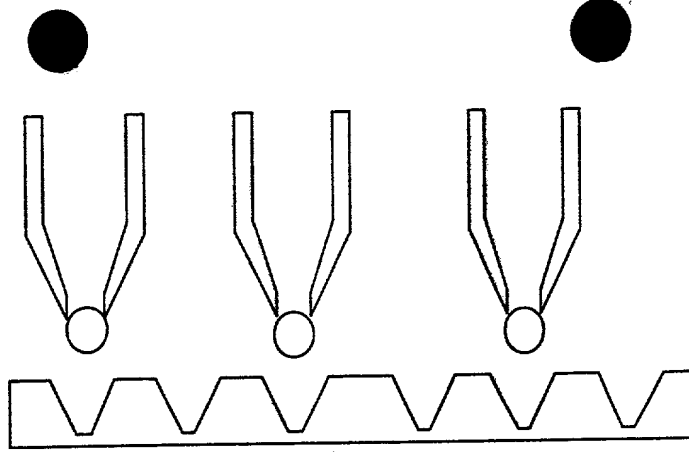


FIG. ~~52A~~ 70A

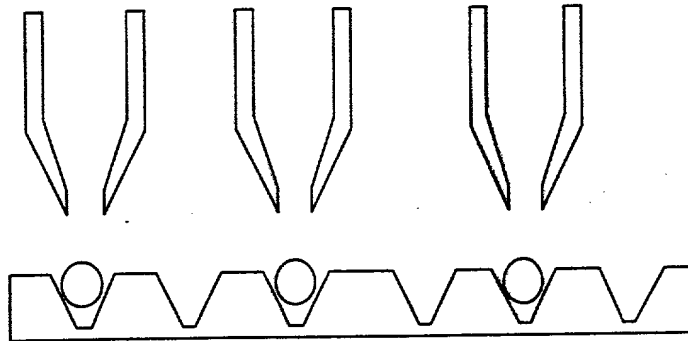


FIG. ~~52B~~ 70B

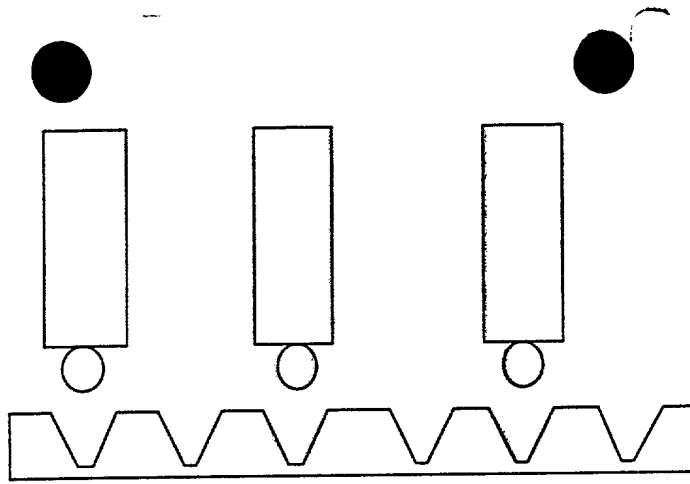


FIG. 502 71A

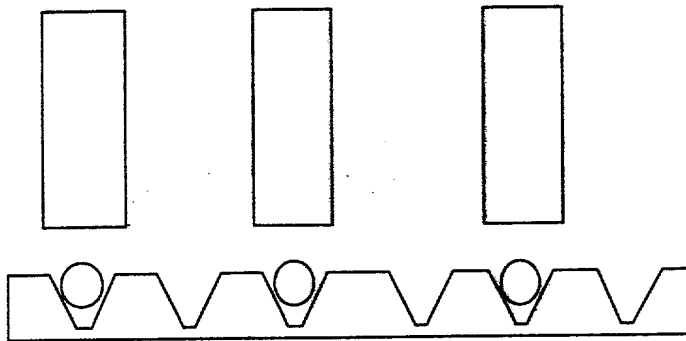


FIG. 503 71B

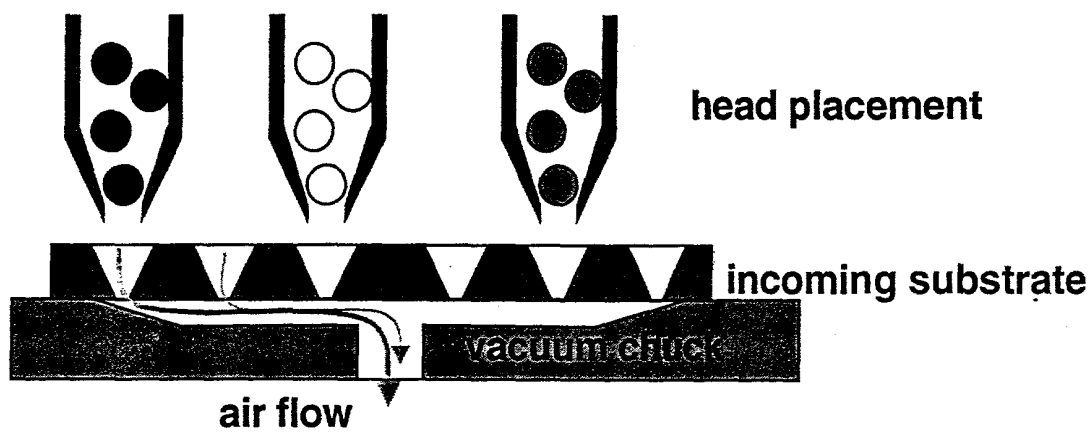


FIG. ~~72~~ 72A

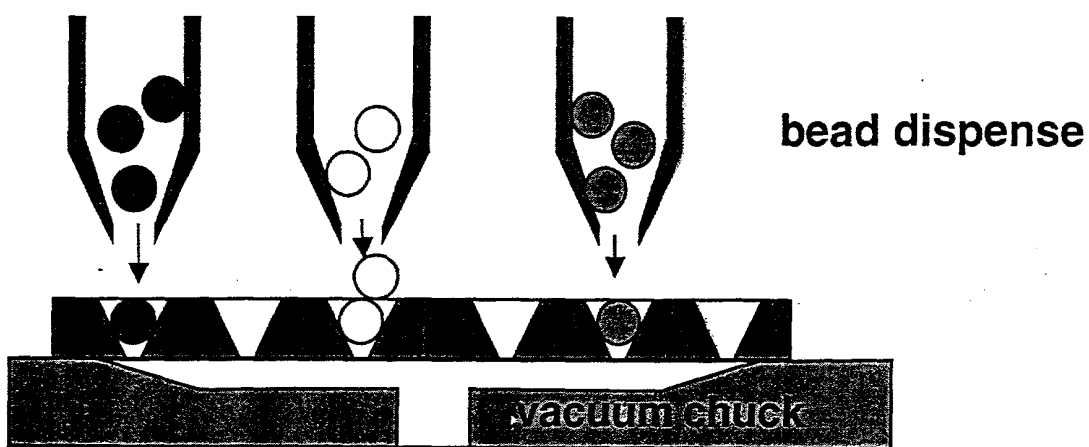


FIG. ~~72~~ 72B

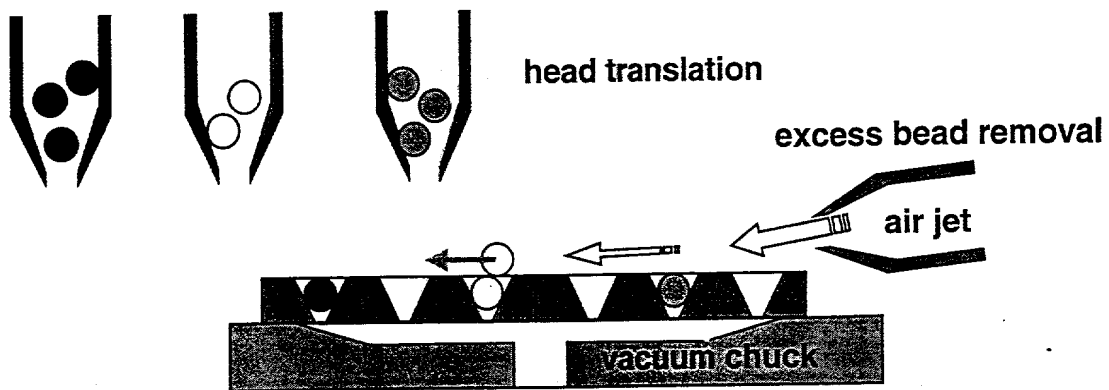


FIG. 592 72C

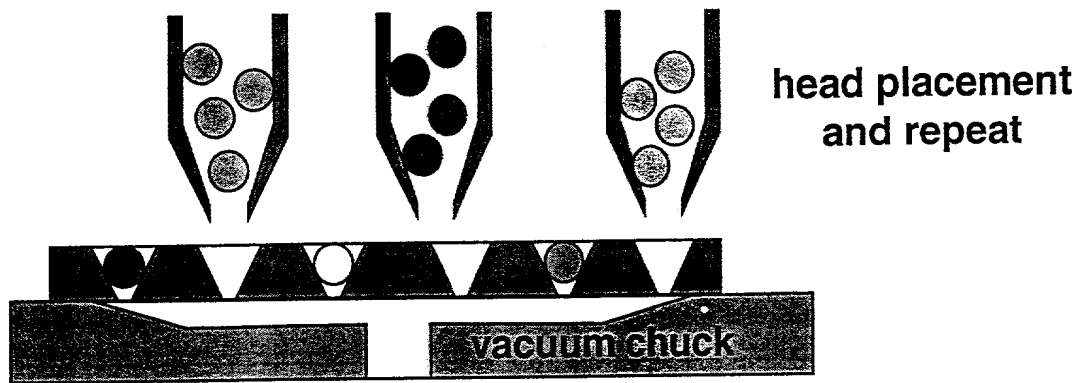


FIG. 590 72D

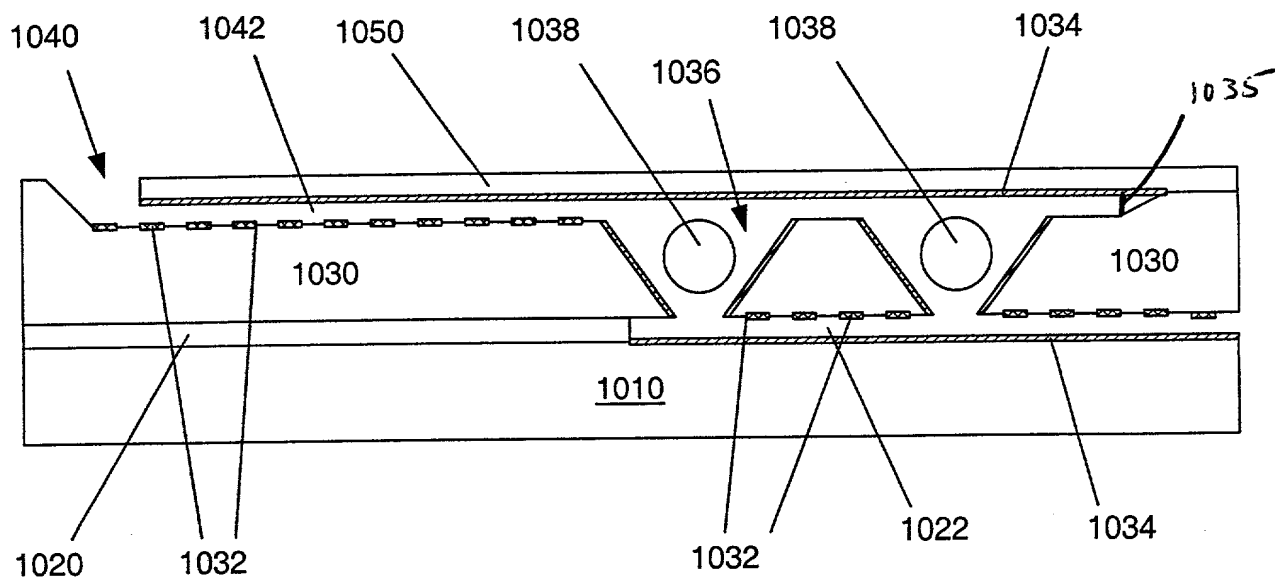


FIG. 73

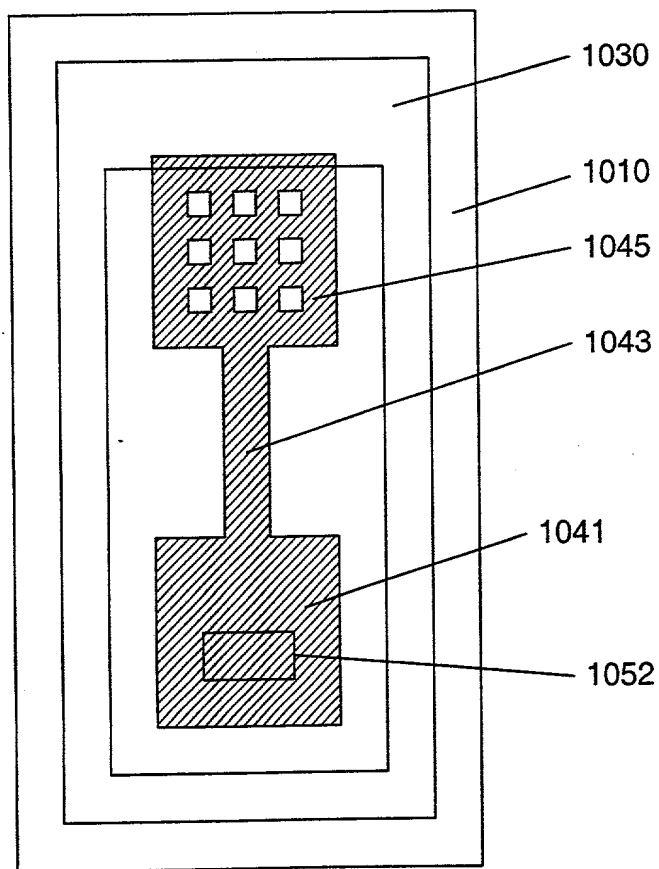


FIG. 74A

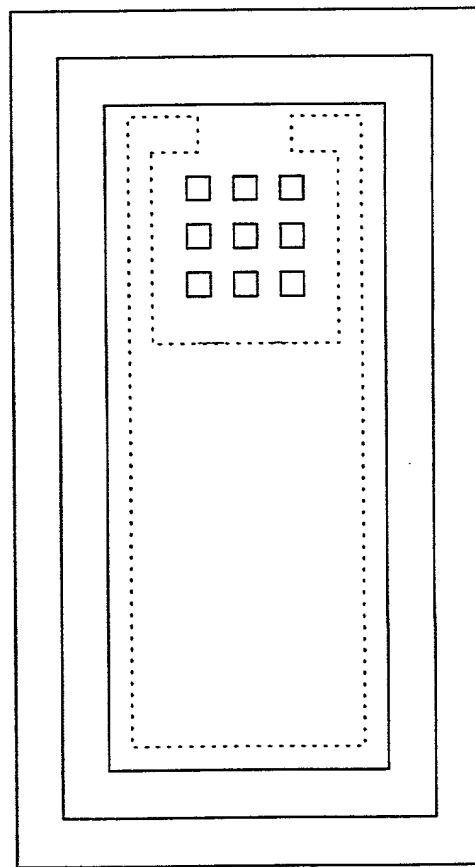


FIG. 74B



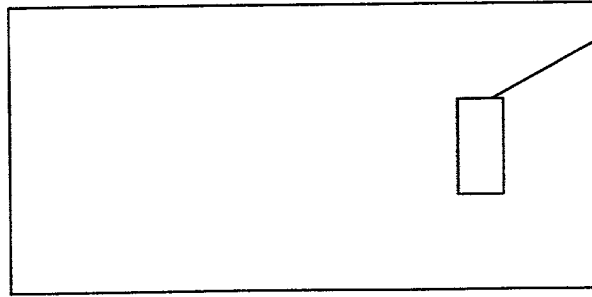


FIG. 5A  
75

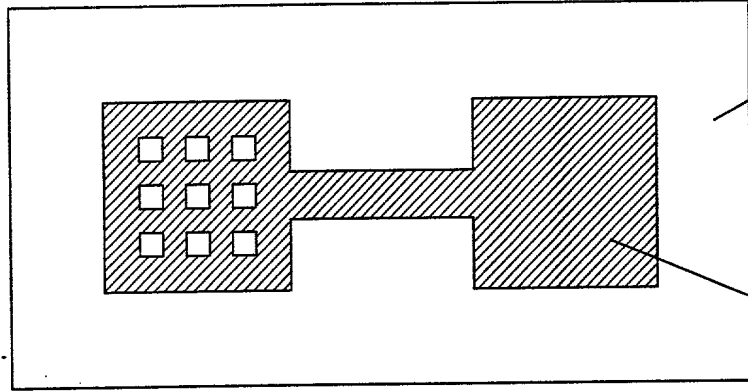


FIG. 5B  
75  
1031  
1033

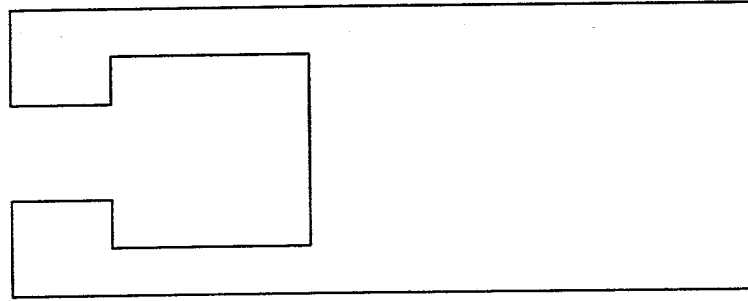


FIG. 5C  
75

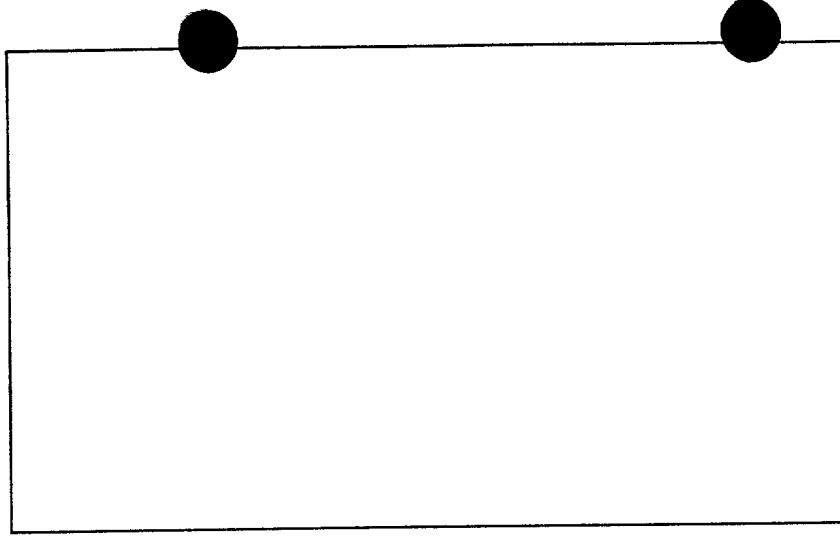


FIG. 5D  
75

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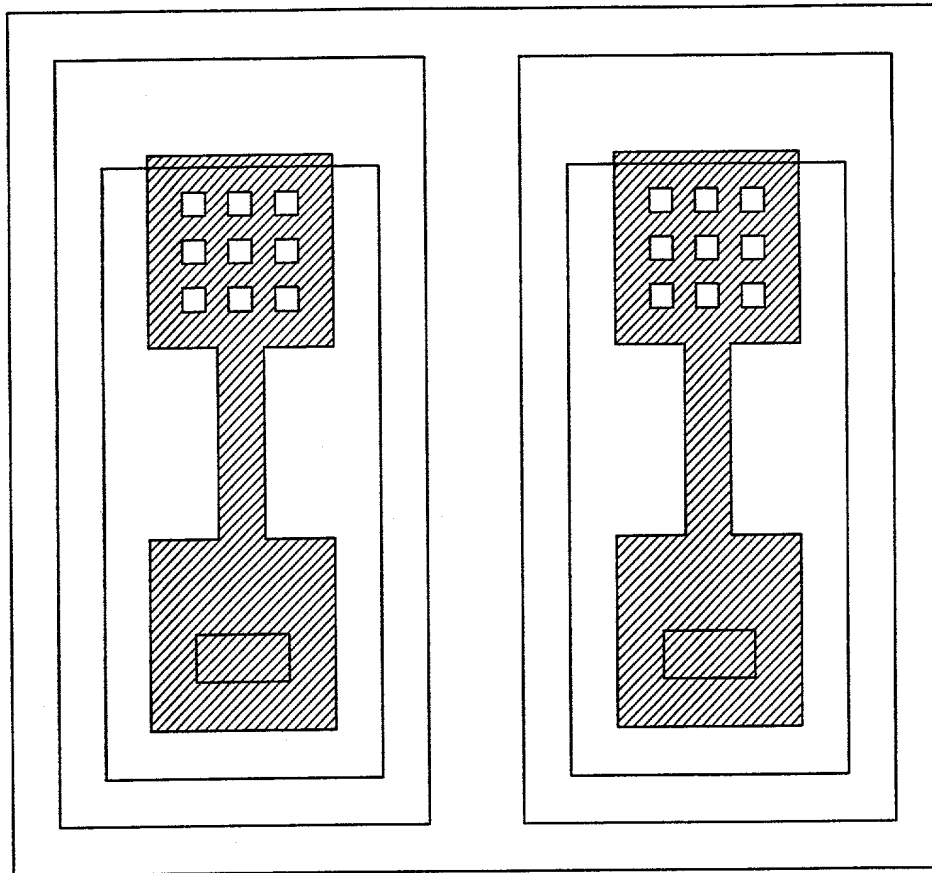


FIG. 76

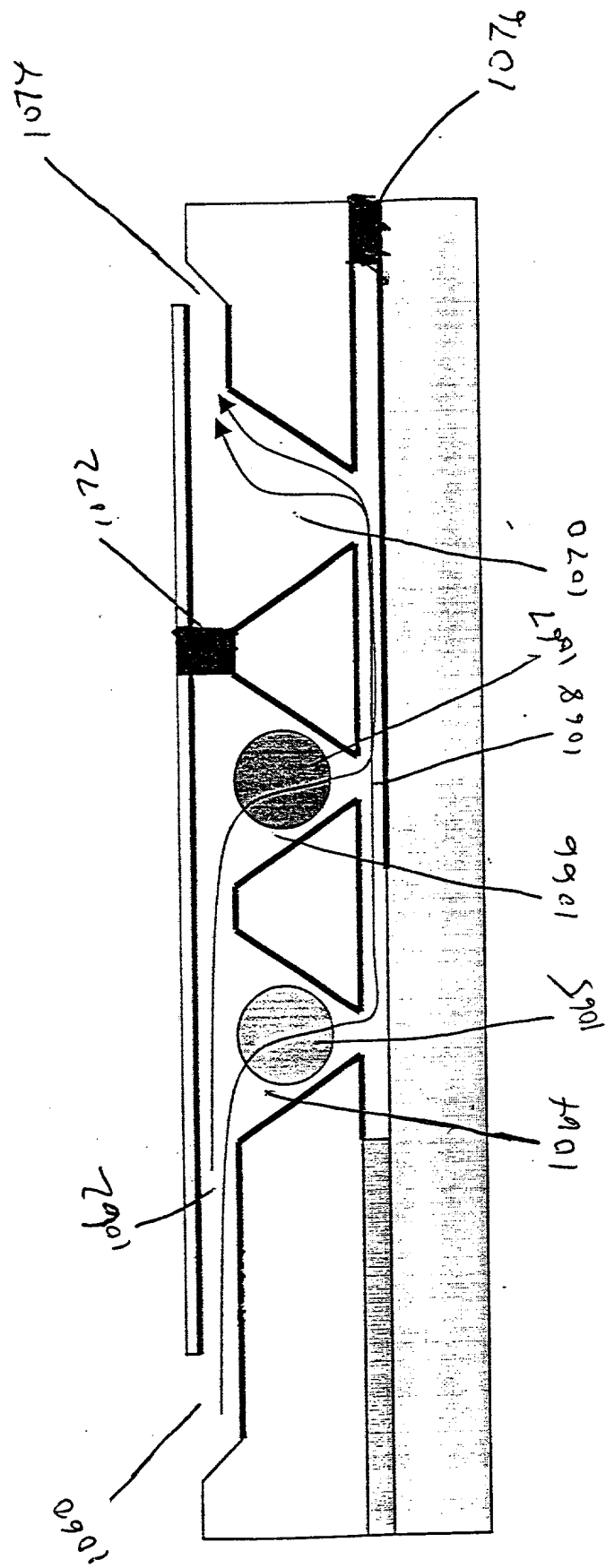
[illegible]

Fig. 77

FIG. 78

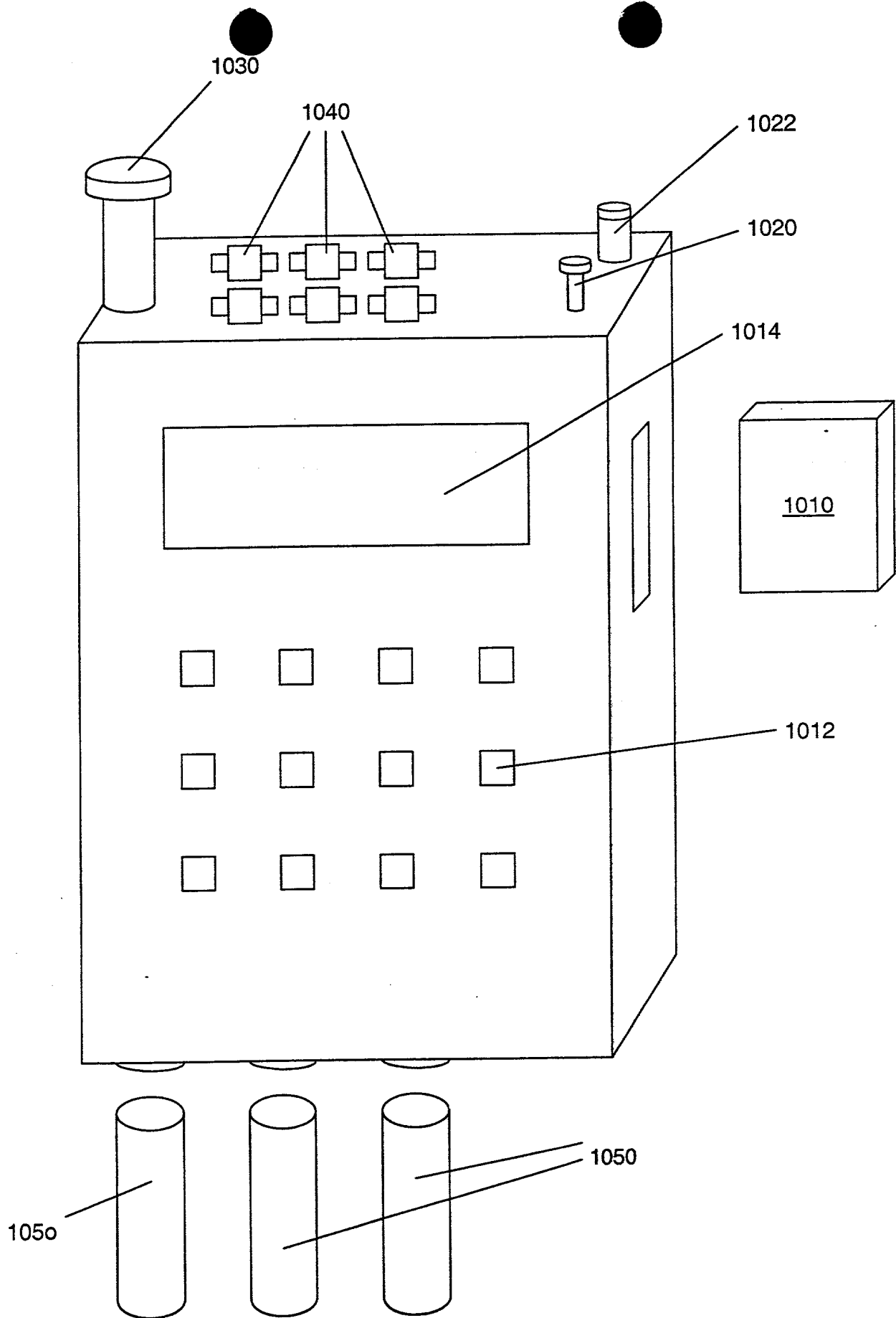


FIG. 78

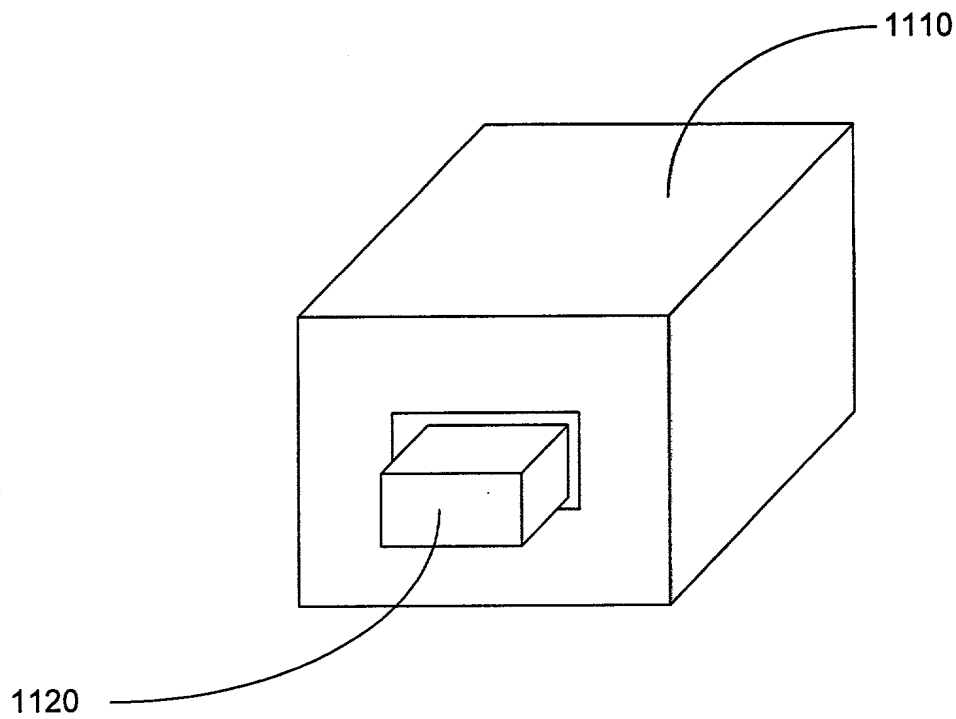


FIG. ~~58A~~ 79A

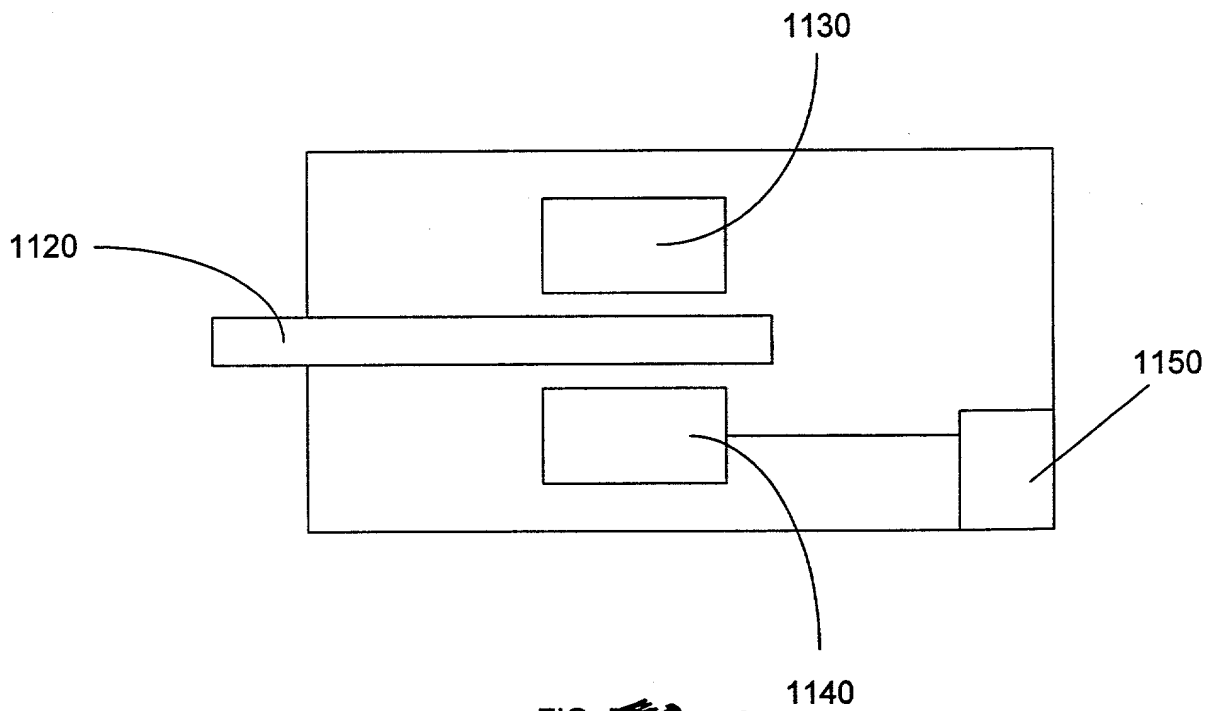


FIG. ~~58B~~ 79B

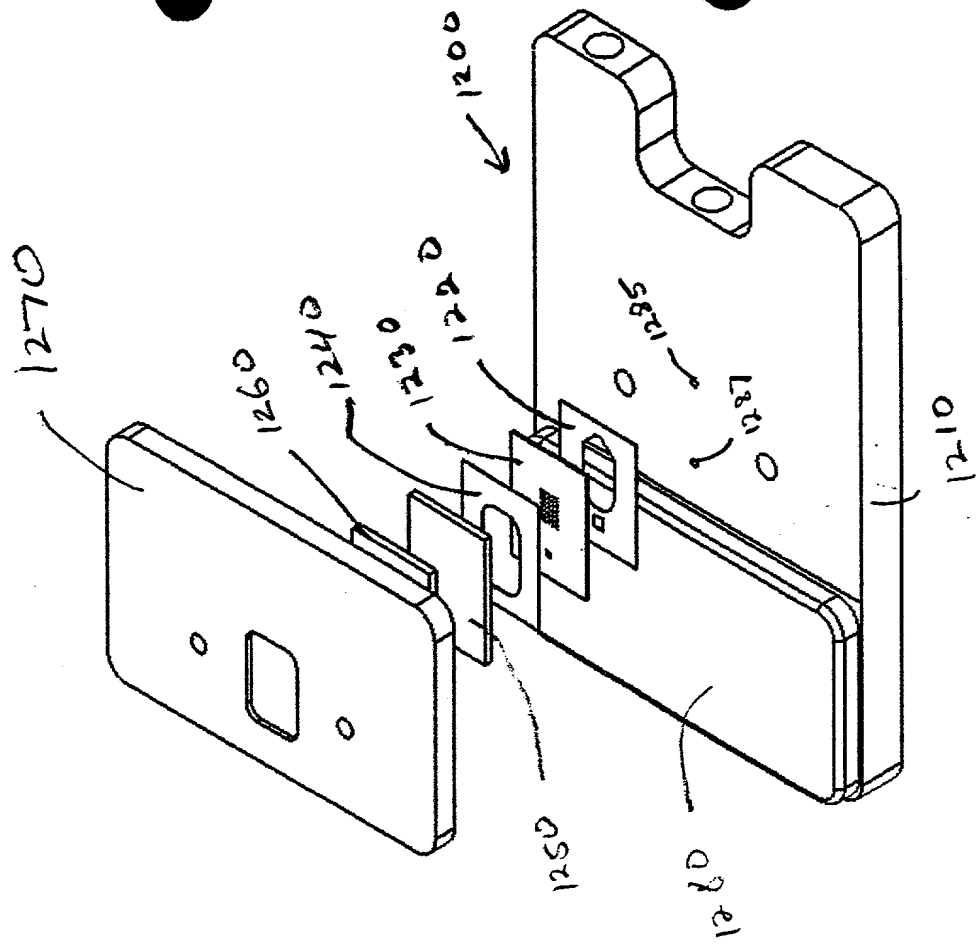


FIG. 80

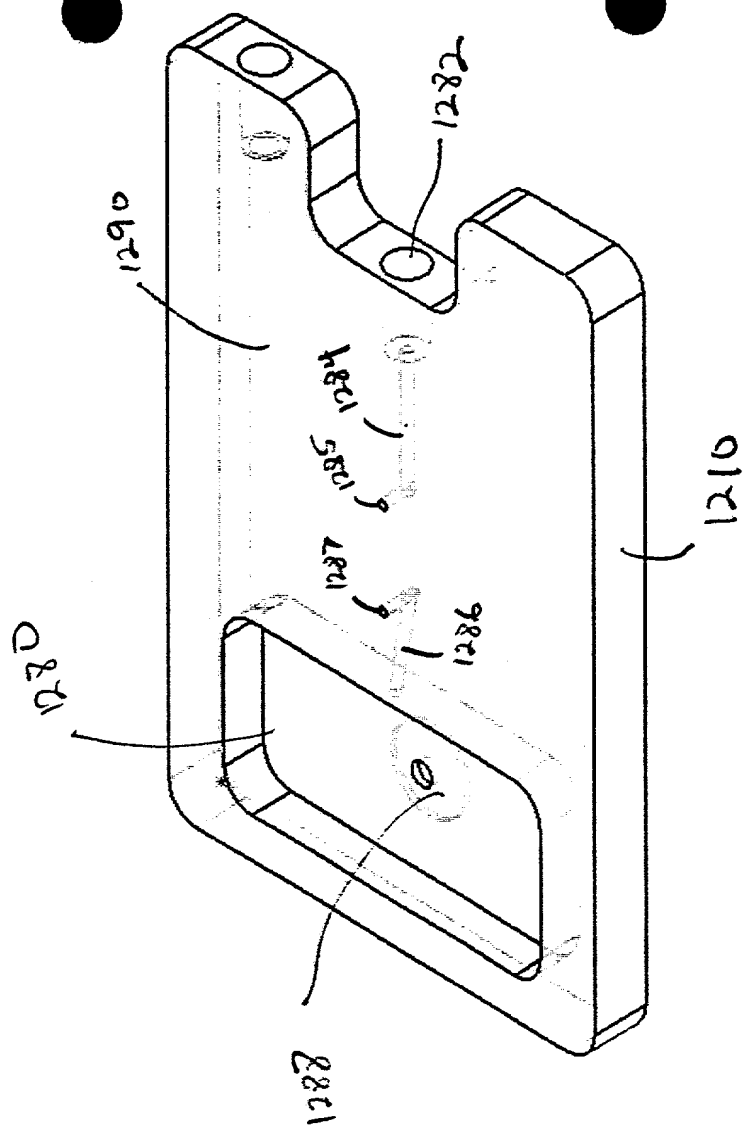


FIG. 81

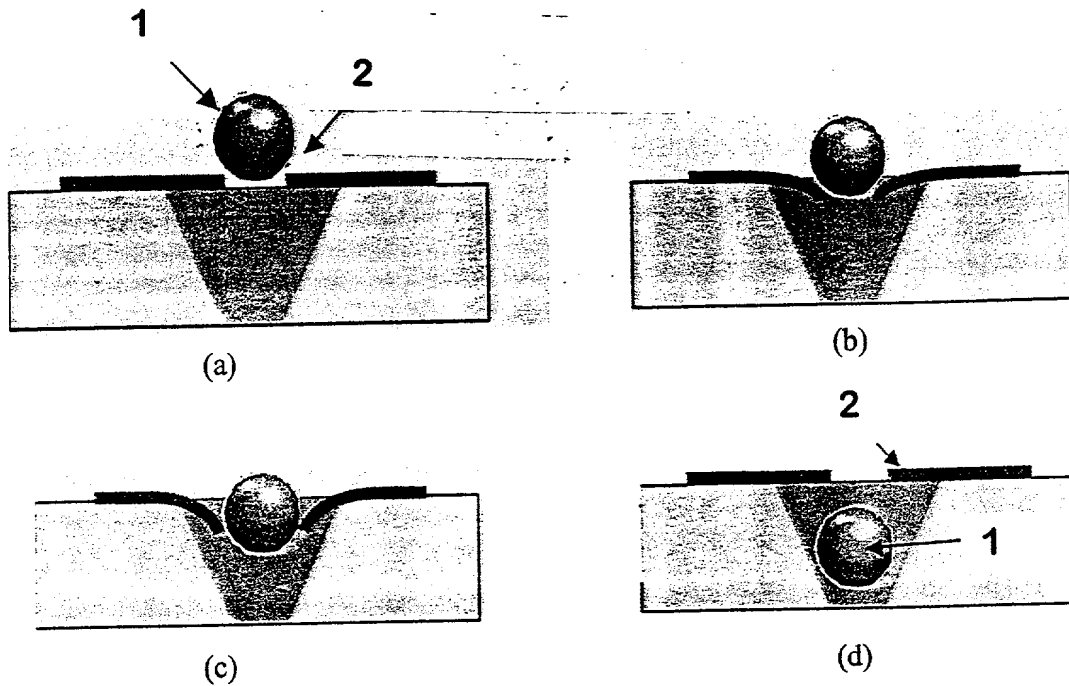


Figure 182